REQUEST FOR PROPOSALS

FEASIBILITY STUDY FOR THE

Nigeria: Kiri Dam Hydroelectric Power Plant

Submission Deadline: **4:00 P.M.**

LOCAL TIME

January 8, 2009

Submission Place: Office of the Governor of Adamawa State
P.M.B. 2066
Yola, Adamawa State
Nigeria

SEALED PROPOSALS SHALL BE CLEARLY MARKED AND RECEIVED PRIOR TO THE TIME AND DATE SPECIFIED ABOVE. PROPOSALS RECEIVED AFTER SAID TIME AND DATE WILL NOT BE ACCEPTED OR CONSIDERED.

REQUEST FOR PROPOSALS

Section 1: INTRODUCTION

The U.S. Trade and Development Agency (USTDA) has provided a grant to the Grantee, the Office of the Governor of Adamawa State (Grantee). The grant agreement is attached at Annex 4 for reference. The Grantee is soliciting technical proposals from qualified U.S. firms to provide expert consulting services to carry out the Feasibility Study.

1.1 BACKGROUND SUMMARY

Both Nigeria's power generation and power transmission capabilities are severely under-exploited. The daily average of generated power in April 2008 was 2,800 MW out of an installed available capacity of 4,728 MW. These figures are far below the peak load forecast of 8,900 MW for the current infrastructure. Compounding the situation is Nigeria's inadequate transmission system, which does not cover every part of the country and only has the capacity to transmit 4,000 MW of electricity. The transmission system has a radial configuration with linear spokes to outlying regions, which further exacerbates its fragility. Disruptions in the system often result in major power outages to large sections of the country, affecting a great number of consumers and businesses.

The State of Adamawa is located in the remote northeastern region of Nigeria, bordering Cameroon. It is one of the largest states in Nigeria and occupies about 36,917 square kilometers with an estimated population of 3.7 million. The primary occupation of its residents is agriculture, including both commodity and food crops, fishing, and cattle rearing. The capital city of Yola has nearly 100,000 inhabitants and is the state's busiest marketplace. At present, the State of Adamawa depends on its power supply from one exclusive transmission line that is part of the national grid, as opposed to a "circular" system that would incorporate a second back-up line from an alternative location. If there is a power loss anywhere along the line, then a total state-wide blackout will occur.

The State of Adamawa is committed to addressing its critical power needs. Currently, Adamawa relies on one transmission line from the national grid for its main source of power. This configuration makes for a fragile delivery system that leaves power recipients vulnerable to outages. Diesel-fueled backup generators are used sporadically in the capital city of Yola, but fuel supplies have become prohibitively expensive. The development of a hydroelectric power plant at the Kiri Dam would offer the state an additional, reliable source of power. Consequently, the project is considered one of the highest priorities for the State of Adamawa.

The construction of the Kiri Power Plant will greatly mitigate Adamawa's precarious power exposure. The Kiri Power Plant Project would serve two critical power needs in Adamawa. First, it would offer an immediate additional supply of 35 MW of electricity to an area that presently has no installed capacity of its own, except for some diesel-powered thermal units in Yola, for which fuel supplies have become prohibitively expensive. Second, it would offer the State a potential power source that is not dependent on the unstable national transmission grid.

A background Definitional Mission is provided for reference in Annex 2.

1.2 OBJECTIVE

This project will include a Feasibility Study which would focus primarily on:

- Technical, financial, and economic analysis of the project.
- Review of related regulatory issues
- Determination of estimated Project costs
- Implementation plan

The project will assess the feasibility of building a 35 MW hydroelectric power plant at the Kiri Dam in the northeastern State of Adamawa in Nigeria. The study will cover the construction of the plant, the transmission line to the national grid, and an independent transmission line from the plant to Yola.

The Terms of Reference (TOR) for this Feasibility Study is attached as Annex 5.

1.3 PROPOSALS TO BE SUBMITTED

Technical proposals are solicited from interested and qualified U.S. firms. The administrative and technical requirements as detailed throughout the Request for Proposals (RFP) will apply. Specific proposal format and content requirements are detailed in Section 3.

COST will not be a factor in the evaluation and therefore, cost proposals should not be submitted; upon detailed evaluation of technical proposals, one firm will be selected for contract negotiations. The amount for the negotiated contract has been established by a USTDA grant of U.S. $467,000.

1.4 CONTRACT FUNDED BY USTDA

The negotiated contract will be funded by USTDA in accordance with the terms and conditions of its grant to the Grantee. The contract must include certain USTDA mandatory clauses relating to nationality, taxes, payment, reporting, and other matters. The USTDA nationality requirements and the USTDA mandatory clauses are attached at Annexes 3 and 4 for reference.

Section 2: INSTRUCTIONS TO PROPOSERS

2.1 PROJECT TITLE

The Project is called "Nigeria: Kiri Dam Hydroelectric Power Plant."

2.2 DEFINITIONS

Please note the following definitions of terms as used in this RFP.

The term "Request for Proposals" means this solicitation of a formal technical proposal including qualifications statement.

The term "Offeror" means the U.S. individual, or U.S. firm, including any and all subcontractors, which responds to the RFP and submits a formal proposal and which may or may not be successful in being awarded this procurement.

2.3 DEFINITIONAL MISSION REPORT

USTDA sponsored a Definitional Mission to address technical, financial, sociopolitical, environmental and other aspects of the proposed project. A copy of the Report is attached at Annex 2 for background information only.

2.4 EXAMINATION OF DOCUMENTS

Offerors should carefully examine this RFP. It will be assumed that Offerors have done such inspection and that through examinations, inquiries and investigation they have become familiarized with local conditions and the nature of problems to be solved during the execution of the Feasibility Study.

Offerors shall address all items as specified in this RFP. Failure to adhere to this format may disqualify an Offeror from further consideration.

Submission of a proposal shall constitute evidence that the Offeror has made all the above mentioned examinations and investigations, and is free of any uncertainty with respect to conditions which would affect the execution, and completion of the Feasibility Study.

2.5 PROJECT FUNDING SOURCE

The Feasibility Study will be funded under a grant from USTDA. The total amount of the grant is not to exceed U.S. $467,000.

2.6 RESPONSIBILITY FOR COSTS

Offeror shall be fully responsible for all costs incurred in the development and submission of the proposal or any other cost incurred by Offeror prior to issuance of an agreement or contract. Neither USTDA nor the Grantee assumes any contractual obligation as a result of the issuance of this proposal request, the preparation or submission of a proposal by an Offeror, the evaluation of proposals, or final selection.

2.7 TAXES

Offerors should submit proposals which note that in Annex 4, USTDA Mandatory Contract Provisions, USTDA funds are not to be used to pay taxes or duties under the laws of host country.

2.8 CONFIDENTIALITY

The Grantee will use its best efforts to preserve the confidentiality of any business proprietary or confidential information submitted by the Offeror, which is clearly designated as such by the Offeror.

2.9 ECONOMY OF PROPOSALS

Proposal documents should be prepared simply and economically, providing a comprehensive and concise description of the Offeror's capabilities to satisfy the requirements of the RFP. There is no necessity for expensive bindings, colored displays, or other promotional material unless such material is absolutely pertinent to the proposal. Emphasis should be placed on completeness and clarity of content.

2.10 SUBSTANTIVE PROPOSALS

The Offeror shall certify (a) that its proposal is genuine and is not made in the interest of, or on the behalf of, any undisclosed person, firm, or corporation, and is not submitted in conformity with, and agreement of, any undisclosed group, association, organization, or corporation; (b) that it has not directly or indirectly induced or solicited any other Offeror to put in a false proposal; (c) that it has not solicited or induced any other person, firm, or corporation to refrain from submitting a proposal; and (d) that it has not sought by collusion to obtain for himself any advantage over any other Offeror or over the Grantee or USTDA or any employee thereof.

2.11 CONDITIONS REQUIRED FOR PARTICIPATION

Only U.S. firms are eligible to participate in this tender. However, U.S. firms may utilize subcontractors from host country for up to 20 percent of the amount of the USTDA grant. Offerors are encouraged to submit proposals that utilize local labor. USTDA nationality requirements are detailed in Annex 3.

2.12 LANGUAGE OF PROPOSAL

All proposal documents shall be prepared and submitted in English, and only English.

2.13 PROPOSAL SUBMISSION REQUIREMENTS

The **Cover Letter** in the proposal must be addressed to:

Governor Murtala H. Nyako
Office of the Governor of Adamawa State
P.M.B. 2066
Yola, Adamawa State
Nigeria

An Original and eight (8) copies of your proposal must be received at the above address no later than 4:00p.m., on January 8, 2009.

Proposals may be either sent by mail, overnight courier, or hand-delivered. Whether the proposal is sent by mail, courier or hand-delivered, the Offeror shall be responsible for actual delivery of the proposal to the above address before the deadline. Any proposal received after the deadline will be returned unopened.

Upon timely receipt, all proposals become the property of the Grantee.

2.14 PACKAGING

Each proposal must be sealed to ensure confidentiality of the information. The proposals should be individually wrapped and sealed, and labeled for content including "original" or "copy number x"; the original and eight (8) copies should be collectively wrapped and sealed, and clearly marked for content.

Neither USTDA nor the Grantee will be responsible for premature opening of proposals not properly labeled.

2.15 AUTHORIZED SIGNATURE

The proposal must contain the signature of a duly authorized officer or agent of the Offeror empowered with the right to bind the Offeror.

2.16 EFFECTIVE PERIOD OF PROPOSAL

The proposal shall be binding upon the Offeror for sixty (60) days after the proposal due date, and Offeror may withdraw or modify this proposal at any time prior to the due date upon written request, signed in the same manner and by the same person who signed the original proposal.

2.17 EXCEPTIONS

Firms agree by their response to the RFP announcement to abide by the procedures set forth therein. Material modifications in the TOR or responsibilities of the parties will not be accepted.

Any exceptions in the proposal shall be clearly identified, and shall include the scope of such exception, and its impact, on the procurement. The Grantee shall make final determination as to the responsiveness of such exceptions and their acceptability.

2.18 OFFEROR QUALIFICATIONS

As provided in Section 3, Offerors shall submit evidence that they have relevant past experience and have previously delivered advisory and Feasibility Study services similar to those required in the TOR.

2.19 RIGHT TO REJECT PROPOSALS

The Grantee reserves the right to reject any and all proposals and to accept or reject any or all of the items in the proposal, and to award the contract in whole or in part if it is deemed in the best interest of the Grantee.

2.20 PRIME CONTRACTOR RESPONSIBILITY

Offerors have the option of subcontracting parts of the services they propose. The Offeror's proposal must include a description of any anticipated subcontracting arrangements, including the name, address, and qualifications of consultants and subcontractors. USTDA nationality provisions are set forth in detail in Annex 3. The successful Offeror shall cause appropriate provisions of its contract, including all mandatory USTDA clauses, to be inserted in all subcontracts ensuing to ensure fulfillment of all contractual provisions by subcontractors.

2.21 AWARD

An award resulting from this RFP shall be made to the best qualified Offeror, taking into consideration the evaluation factors set forth herein; however, the right is reserved to reject any and all proposals received and, in all cases, the Grantee will be the judge as to whether a proposal has or has not satisfactorily met the requirements of this RFP.

2.22 COMPLETE SERVICES

The successful Offeror shall be required to (a) furnish all supplies, supervision, transportation, and other execution accessories, services, and facilities; (b) provide and perform all necessary labor; and (c) in accordance with good technical practice, with due diligence, and in accordance with the requirements, stipulations, provisions and conditions of this RFP and the resultant contract, execute and complete all specified work to the satisfaction of the Grantee.

2.23 INVOICING AND PAYMENT

Deliverables under the contract shall be delivered on a schedule to be agreed upon in a contract with the Grantee. The Contractor may submit invoices to the designated Grantee Project Director in accordance with a schedule to be negotiated and included in the contract. Upon approval of each invoice, the Grantee will forward the invoice to USTDA which will process payment to the Contractor. All payments by USTDA under the Grant Agreement will be made in U.S. currency.

Section 3: PROPOSAL FORMAT AND CONTENT

To expedite proposal review and evaluation, and to assure that each proposal receives the same orderly review, all proposals must follow the format described in this section.

Proposal sections and pages shall be appropriately numbered and the proposal shall include a Table of Contents. Offerors are encouraged to submit concise and clear responses to the RFP. Proposals shall contain all elements of information requested without exception. Instructions regarding the required scope and content are given in this section. The Grantee reserves the right to include any part of the selected proposal in the final contract.

The proposal shall consist of a technical proposal only. No cost proposal is required as the value of the USTDA grant is established at U.S. $467,000.

Offerors shall submit one (1) original and eight (8) copies of the proposal. Proposals received by fax cannot be accepted. In addition, the Grantee will not respond to inquiries after 15 days of this RFP's posting date.

The following sections and content are required for each proposal:

Transmittal Letter,
Cover/Title Page,
Table of Contents,
Introduction and Executive Summary,
Company Information,
Organizational Structure, Management Plan, and Key Personnel,
Technical Approach and Work Plan,
Experience and Qualifications, and
Miscellaneous.

Detailed requirements and directions for the preparation of each section are presented below.

3.1 SECTION 1: INTRODUCTION AND EXECUTIVE SUMMARY

An Executive Summary should be prepared describing the major facts or features of the proposal, including any conclusions, assumptions, and generalized recommendations the Offeror desires to make. Offerors are requested to make every effort to limit the length of the Executive Summary to no more than five (5) pages.

3.2 SECTION 2: COMPANY INFORMATION

3.2.1 Company Profile

Provide the information listed below relative to the Offeror's firm. If the Offeror is proposing to subcontract some of the proposed work to another firm(s), similar information must be provided for each subcontractor. Offerors are requested to limit the length of the Company Profile Information to one (1) page per firm.

1. Name of firm and business address, including telephone and fax numbers.

2. Year established (include former firm names and year established, if applicable).

3. Type of ownership and parent company, if any.

4. Project Manager's name, address, telephone and fax number, if different from (1).

3.2.2 Offeror's Authorized Negotiator

Provide name, title, address, telephone and fax number of the Offeror's authorized negotiator. The person cited shall be empowered to make binding commitments for the Offeror and its subcontractors, if any.

3.2.3 Negotiation Prerequisites

1. Discuss any impact of any current or anticipated commitments which may impact the ability of the Offeror or its subcontractors to complete the Feasibility Study as proposed and within the project schedule.

2. Identify any specific information which is needed from the Grantee before commencing contract negotiations.

3.3 SECTION 3: ORGANIZATIONAL STRUCTURE, MANAGEMENT, AND KEY PERSONNEL

Describe the Offeror's proposed project organizational structure. Discuss how the project will be managed including the principal and key staff assignments for this Feasibility Study. Identify the Project Manager who will be the individual responsible for this project. The Project Manager must have the responsibility and authority to act on behalf of the Offeror in matters related to the proposed Feasibility Study.

Provide a listing of personnel (including subcontractors and consultants) to be engaged in the project, either U.S. or local with the following information for key staff: position in the project; pertinent experience, curriculum vitae; other relevant information. If subcontractors are to be used, the organizational relationship between the firms must be described.

A manpower schedule and the level of effort for the project period, by activities and tasks, as detailed under the Work Plan shall be submitted. A statement confirming the availability of the proposed project manager and key staff over the duration of the project must be included in the proposal.

3.4 SECTION 4: TECHNICAL APPROACH AND WORK PLAN

Describe in detail the proposed technical approach and work plan. Discuss the project requirements as perceived by the Offeror. Include a brief narrative of tasks within each activity series. Begin with the information gathering phase and continue through delivery and approval of all required reports.

Prepare a detailed schedule of performance that describes all activities and tasks within the Technical Work Plan, including periodic reporting or review points, incremental delivery dates, and other project milestones.

Based on the Technical Work Plan, and previous project experience, explain when and where Offeror will require support from the Grantee. Detail the amount of staff time required by the Grantee or participating agencies and any work space or facilities needed to complete the Feasibility Study.

3.5 SECTION 5: EXPERIENCE AND QUALIFICATIONS

Provide a discussion of the Offeror's experience and qualifications which are relevant to the objectives and TOR for the Feasibility Study. If a subcontractor(s) is being used, similar information must be provided for the prime and each subcontractor firm proposed for the project. Relevant experience and qualifications of key staff proposed shall be provided including letters of commitment from the individuals proposed concerning their availability for contract performance.

As many as possible but not more than six (6) relevant and verifiable project references must be provided, including the following information:

Project name,
Name and address of client (indicate if joint venture),
Client contact person (name/ position/ current phone and fax numbers),
Period of Contract,
Description of services provided,
Dollar amount of Contract, and
Status and comments.

Offerors are strongly encouraged to include in their experience summary primarily those projects that are similar to or larger in scope than the Feasibility Study as described in this RFP.

Section 4: AWARD CRITERIA

Individual proposals will be initially evaluated by a Procurement Selection Committee of representatives from the Grantee. The Committee will then conduct a final evaluation and completion of ranking of qualified Offerors, and the Grantee shall promptly negotiate a contract with the best qualified Offeror. If a satisfactory contract cannot be negotiated with the best qualified Offeror, negotiations will be formally terminated. Negotiations shall then be undertaken with the second most qualified Offeror and so forth.

The selection of the Contractor will be based on the following criteria:

CONTRACTOR QUALIFICATIONS

Given the project objective to assess the feasibility of converting the Kiri irrigation dam to a hydro-power site and constructing a 35 MW hydro-electric power plant and transmission facilities to deliver the electricity to end-users in and around the Capital of Yola, it is recommended that a highly specialized consulting firm with at least 15 years of experience in the field be employed. The consulting firm to be selected will, at a minimum, employ the following key specialists:

- **One full-time Project Manager,** strongly preferred with an advanced degree (for example, a Master's degree in electrical engineering, or a BS degree in electrical engineering with an MBA) and a required minimum of 20 years of experience. If the Project Manager does not have an advanced degree, a Bachelor's degree in electrical engineering and a minimum of 25 years of experience is required. His/her experience must be primarily in power generation and transmission/distribution, with prolonged exposure to hydro-electric power generation. His/her past work must have been with an electric power company at the executive level, or with a consulting firm specializing in or dealing with hydro-power generation. He/she must have a thorough understanding of present-value, rate-of-return, and levelized-cost computer programs. Experience as team leader in at least three projects dealing with power generation in all of its ramifications, including take-off contracts, is indispensable. The Project Manager will assume single-point responsibility for the project. He/she must have a demonstrated ability and proven track record in managing complex industrial/legal projects in foreign environments.

- **One part-time Senior Geologist, Geophysicist or Soil Mechanics Engineer** with a post-graduate degree (an MS in geology/geophysics/soil mechanics) and 15 years of experience in soil stability evaluations related to water dams, or with a BS degree in geology/geophysics/soil mechanics and a minimum of 20 years of such experience. He/she must have worked with a construction company or with a consulting firm specializing in water dams. His/her responsibility on this project will be to review the soil stability data that were used as part of the construction of the Kiri dam and to make sure that the dam will support the proposed conversion to power production.

- **One part-time Senior Finance Specialist** who will evaluate the financial viability of the Kiri hydro-electric power project. An MBA or post-graduate degree in finance is preferred, but not required. A bachelors in business or finance and 15 years of experience in analyzing and designing complex financial transactions is required. The Senior Finance specialist must be familiar with present-value, rate-of-return, and levelized-cost computer programs and must thoroughly understand regulated tariffs and opportunity costs. His/her experience must consist of work in the financial planning department of a large company, or work at a consulting firm specializing in or dealing with complex financial transactions.

SELECTION CRITERIA

1) **The Firm, 30%:** Experience and proven ability in managing complex power generation, transmission and distribution projects in international settings. The emphasis will be on quality performance and experience. Specific evaluation factors and their values are listed below:

Firm Evaluation Factors – 30%	Maximum Points
a) Years in Business (since Foundation)	
15 Years	4 Points
20 Years	8 Points
25 Years-Plus	12 Points
b) Leadership in Hydro-Power Projects	
3 Projects	3 Points
5 Projects	9 Points
8 Projects-Plus	12 Points
c) Type of Client	
Experience with Power Utilities	3 Points
Exp. Negotiating with Foreign Governments	6 Points
TOTAL MAXIMUM (30 of 100 Points)	30 Points

2) **The Proposal, 40%:** Approach, methodology, and strategy in meeting the required tasks within the proposed time-line. This includes a review and evaluation of the proposed Kiri hydro-power facility and associated transmission facilities.

Proposal Evaluation Factors – 40%	Maximum Points
a) Approach	10 Points
b) Methodology	15 Points
c) Strategy	15 Points
TOTAL MAXIMUM (40 of 100 Points)	40 Points

3) **Personnel, 30%:** Experience of the Project Manager and the two Senior Specialists listed in the budget. The two most important selection criteria in this category are previous participation in similar projects (maximum 12 points out of 30), and professional experience (9 points). Experience in advising foreign governments is rated higher than corporate consulting experience. The degree is rated lower than other selection criteria.

Personnel Evaluation Factors – 30%	Manager: Maximum	Senior Specialists:	Average Overall

	Overall Points, 50%	Maximum Overall Points, 50%	Points
a) Highest Relevant Degree			
BS	1 Point	1 Point	1 Point
MS/MBA	2 Points	2 Points	2 Points
PhD/JD	3 Points	3 Points	3 Points
b) Professional Experience			
15 Years	4 Points	4 Points	4 Points
20 Years	6 Points	6 Points	6 Points
25 Years-Plus	9 Points	9 Points	9 Points
c) Participation in Similar Projects			
1 Project	0 Points	4 Points	4 Points
3 Projects	8 Points	8 Points	8 Points
5 Projects	12 Points	12 Points	12 Points
d) Type of Client			
Individual Firms	3 Points	3 Points	3 Points
Foreign Governments	6 Points	6 Points	6 Points
TOTAL MAXIMUM (30 of 100 Points)	30 Points	30 Points	30 Points

Note: To qualify for consideration of the proposal, the resumes of the Project Manager and the two Senior Specialists, must be submitted in a legally binding form, bearing the individuals' original signatures. No substitution of key professionals will be permitted.

Price will not be a factor in contractor selection.

ANNEX 1

OFFICE OF THE GOVERNOR OF ADAMAWA STATE, P.M.B. 2066, YOLA, ADAMAWA STATE, NIGERIA

B – Nigeria: Kiri Dam Hydroelectric Power Plant Feasibility Study

POC John Kusnierek, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. Nigeria: Kiri Dam Hydroelectric Power Plant Feasibility Study. The Grantee invites submission of qualifications and proposal data (collectively referred to as the "Proposal") from interested U.S. firms which are qualified on the basis of experience and capability to develop a Feasibility Study for the Office of the Governor of Adamawa State in Nigeria.

The State of Adamawa is located in the remote northeastern region of Nigeria, bordering Cameroon. It is one of the largest states in Nigeria and occupies about 36,917 square kilometers with an estimated population of 3.7 million. The State of Adamawa is committed to addressing its critical power needs. Currently, Adamawa relies on one transmission line from the national grid for its main source of power. This configuration makes for a fragile delivery system that leaves power recipients vulnerable to outages. Diesel-fueled backup generators are used sporadically in the capital city of Yola, but fuel supplies have become prohibitively expensive. The development of a hydroelectric power plant at the Kiri Dam would offer the state an additional, reliable source of power. Consequently, the project is considered one of the highest priorities for the State of Adamawa.

The Kiri Power Plant Project would serve two critical power needs in Adamawa. First, it would offer an immediate additional supply of 35 MW of electricity to an area that presently has no installed capacity of its own, except for some diesel-powered thermal units in Yola, for which fuel supplies have become prohibitively expensive. Second, it would offer the State a potential power source that is not dependent on the unstable national transmission grid.

This project will include a Feasibility Study which would focus primarily on:

- Technical, financial, and economic analysis of the project.
- Review of related regulatory issues
- Determination of estimated Project costs
- Implementation plan

The project will assess the feasibility of building a 35 MW hydroelectric power plant at the Kiri Dam in the northeastern State of Adamawa in Nigeria. The study will cover the construction of the plant, the transmission line to the national grid, and an independent transmission line from the plant to Yola.

The U.S. firm selected will be paid in U.S. dollars from a $467,000 grant to the Grantee from the U.S. Trade and Development Agency (USTDA).

A detailed Request for Proposals (RFP), which includes requirements for the Proposal, the TOR, and a background definitional mission report are available from USTDA, at 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901. To request the RFP in PDF format, please go to: https://www.ustda.gov/businessopps/rfpform.asp. Requests for a mailed hardcopy version of the RFP may also be faxed to the IRC, USTDA at 703-875-4009. In the fax, please include your firm's name, contact person, address, and telephone number. Some firms have found that RFP materials sent by U.S. mail do not reach them in time for preparation of an adequate response. Firms that want USTDA to use an overnight delivery service should include the name of the delivery service and your firm's account number in the request for the RFP. Firms that want to send a courier to USTDA to retrieve the RFP should allow one hour after faxing the request to USTDA before scheduling a pick-up. Please note that no telephone requests for the RFP will be honored. Please check your internal fax verification receipt. Because of the large number of RFP requests, USTDA cannot respond to requests for fax verification. Requests for RFPs received before 4:00 PM will be mailed the same day. Requests received after 4:00 PM will be mailed the following day. Please check with your courier and/or mail room before calling USTDA.

Only U.S. firms and individuals may bid on this USTDA financed activity. Interested firms, their subcontractors and employees of all participants must qualify under USTDA's nationality requirements as of the due date for submission of qualifications and proposals and, if selected to carry out the USTDA-financed activity, must continue to meet such requirements throughout the duration of the USTDA-financed activity. All goods and services to be provided by the selected firm shall have their nationality, source and origin in the U.S. or host country. The U.S. firm may use subcontractors from the host country for up to 20 percent of the USTDA grant amount. Details of USTDA's nationality requirements and mandatory contract clauses are also included in the RFP.

Interested U.S. firms should submit their Proposal in English directly to the Grantee by 4:00 p.m. on January 8, 2009 at the above address. Price will not be a factor in contractor selection, and therefore, cost proposals should NOT be submitted. The Grantee reserves the right to reject any and/or all Proposals. The Grantee also reserves the right to contract with the selected firm for subsequent work related to the project. The Grantee is not bound to pay for any costs associated with the preparation and submission of Proposals.

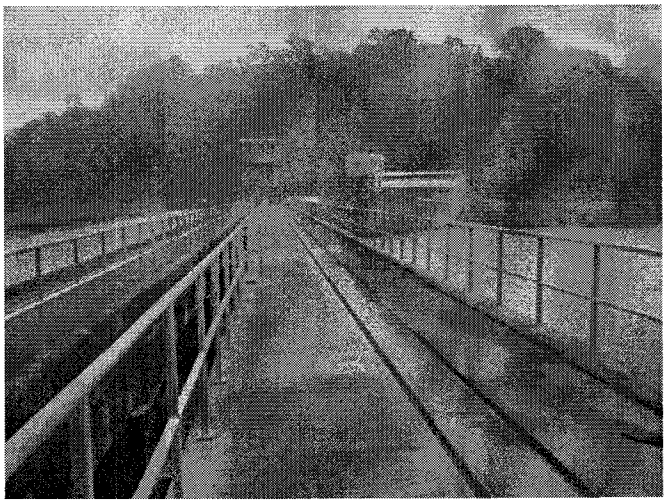
ANNEX 2

DEFINITIONAL MISSION REPORT

PART B

THE KIRI DAM POWER PROJECT

USTDA CO 2008 110005



MAY 2, 2008

Submitted by:

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The U.S. Trade and Development Agency

The U.S. Trade and Development Agency (USTDA) advances economic development and U.S. commercial interests in developing and middle income countries. The agency funds various forms of technical assistance, early investment analysis, training, orientation visits and business workshops that support the development of a modern infrastructure and a fair and open trading environment.

USTDA's strategic use of foreign assistance funds to support sound investment policy and decision-making in host countries creates an enabling environment for trade, investment and sustainable economic development. Operating at the nexus of foreign policy and commerce, USTDA is uniquely positioned to work with U.S. firms and host countries in achieving the agency's trade and development goals. In carrying out its mission, USTDA gives emphasis to economic sectors that may benefit from U.S. exports of goods and services.

Mailing and Delivery Address: 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901
Phone: 703–875–4357 • **Fax:** 703–875–4009 • **Web site:** www.ustda.gov • **email:** info@ustda.gov

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APPENDICES

EXECUTIVE SUMMARY

This section of the Definitional Mission Report describes the results of an evaluation of a potential hydro-power site, the Kiri Dam, which is located on the Gongola River, a tributary of the Benue River. The Kiri Dam is about 85 km from Yola, the capital of the State of Adamawa. There exists an 11 KV national grid power line within one or two kilometers of the site linking Gombe to Yola.

The Kiri Dam was originally built in 1982 as an agricultural water storage dam to support the growth of sugarcane in the area and to make water available to the Savannah Sugarcane Factory located 12 km downstream of the dam. There is, therefore, no need to construct an impoundment dam. The conversion of the present irrigation dam for the purpose of accommodating a hydro-power plant is all that is needed in terms of civil works. The construction of a power plant and the required ancillary electrical equipment to connect the power from the Kiri Plant to the nearby grid will complete the power generation project.

The water flow data at hand suggest that the plant will have a capacity of 35 to 50 MW. The dam itself is an earth-filled dam and the top of it is used as a road that connects the two banks of the Gongola River. The dam is accessible from the main paved road from Yola by a 3 km unpaved road that is adequate for transporting heavy construction equipment.

The overall cost of the project has been estimated at $44 million, based on an assumed capacity of 35 MW and connection of the power output to the nearby national grid. These costs, which need to be reviewed by the USTDA Feasibility Study Team, include the conversion of the irrigation dam to accommodate a hydro-power generating plant, the construction of a 35 MW plant and the installation of transmission and transformer facilities to take the power to be generated to the nearby national power grid. The U.S. export potential of the project has been estimated at $11-22 million. Foreign competition will be fierce, but there are no barriers to entry and the current low U.S. dollar standing will favor the importation of American equipment.

The State of Adamawa is starved for power. At the present time, consumers depend on their power supply from the national power grid and some back-up self generator-diesel power in the Capital of Yola, for which fuel supplies have become prohibitively expensive. The national grid configuration makes for a fragile delivery system that leaves power recipients in Yola and surroundings vulnerable to power black-outs. So precarious has the situation become that the State is prepared, if absolutely necessary, to undertake the construction of the Kiri Power Plant on its own. Given the fragility of the linearly-configured power supply from the national grid, the State would prefer to bring the Kiri power to Yola through a direct transmission line that would bypass the national grid. An assessment of the pro's and con's of developing such an off-grid power supply line from Kiri to Yola will be part of the Consultants' feasibility study.

The Governor of the State of Adamawa has expressed his commitment to the project in a letter to USTDA, in which he wrote, among other things, that: "the proposed project is part of the priority projects of my Administration aimed at promoting the rapid development of the State".

Since the State of Adamawa has limited resources, development of the Kiri power plant as an IPP or PPP is the preferred route. If a U.S. partner can be found, or if significant U.S. equipment goes into the construction of this project, various bilateral and multilateral funding sources may be available in support

of the private investor's funding needs, who may also wish to resort to commercial debt or to third-party equity participation. The African Development Bank, the World Bank, and the European Bank for Reconstruction and Development come to mind as important multilateral sources for outside funding. As to unilateral U.S. sources, OPIC and the Ex-Im Bank have been consulted and are prepared to assist within the framework of their mission.

The construction of the Kiri Hydro-Power Plant meets all of USTDA's development criteria, including significant infrastructure development, market oriented reforms, human capacity building, and a substantial technology transfer and productivity improvement.

The Kiri site is located in the middle of an agricultural area which is largely tropical grassland containing scattered trees, and relatively sparsely populated. There are no national parks or wildlife refuges near it. Hence, no problems are expected in the area regarding plant or animal endangerment. Since the dam has been in existence for more than a quarter century and since the impoundment lake will remain unchanged in size, there will be no displacement of people.

As mentioned in the Section on U.S. Export Potential, the overall impact of this project will be the potential export of up to $22.4 million dollars worth of U.S. power generating and transmission equipment and associated services. That is the equivalent of providing one year of work for approximately 300 U.S. workers, based on 2005 U.S. GNP and employment data. Beyond the creation of jobs in the United States,
there will be no outsourcing of U.S. jobs to Nigeria.

The principal justification for doing this feasibility study is that the project, if implemented, meets an urgent need to stave off electric power black-outs; opens up power supplies well beyond what is available now; holds significant promise in terms of economic development for the State of Adamawa which is located in the remote and poverty-stricken north-eastern region of Nigeria; and offers improved living conditions for its people. The project will provide; directly through work on the plant and transmission facilities, and indirectly through the enhanced availability of electricity, considerable human capacity development and it has a favorable export potential. Another good reason for justifying the Kiri project is the elimination of economic losses that occur every time a power shortage or black-out takes place.

Based on the developmental benefits that will accrue to the State of Adamawa by virtue of the development of the Kiri hydro-electric power plant, and on a review of USTDA's other investment criteria, it is recommended that this project, estimated to cost $467,700 be approved.

PROJECT DESCRIPTION

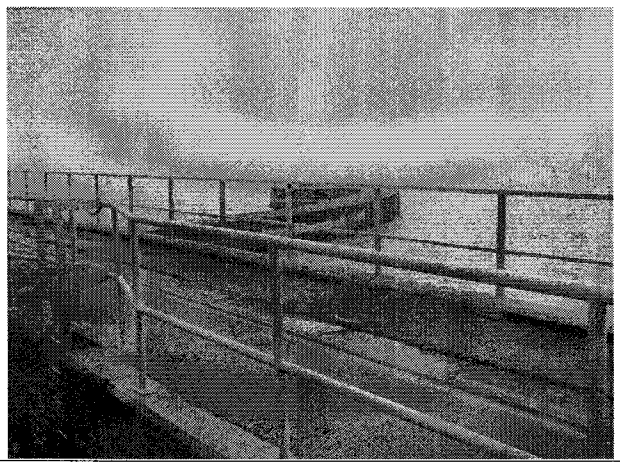
This section of the Definitional Mission Report describes the result of an evaluation of a potential hydro-power site, the Kiri Dam, which is located on the Gongola River, a tributary of the Benue River. There is another dam, the Dandikowa Dam, that has just recently been built upstream in Gombe which has a capacity of 35 MW. The Kiri Dam is located about 85 km from Yola, the capital of Adamawa State. There exists an 11 KV national-grid power line within one or two kilometers of the site linking Gombe to Yola. The Kiri Dam was originally built in 1982 as an agricultural water storage dam to support the irrigation of farms and the growth of sugarcane in the area and, in particular, to make water available to the recently privatized Savannah Sugarcane Factory located 12 km downstream of the dam. The Dam is currently managed by the Upper Benue River Basin Development Authority, with its office located in Yola.

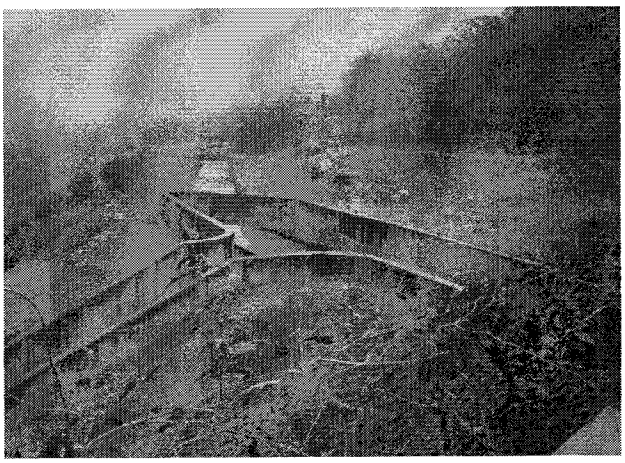
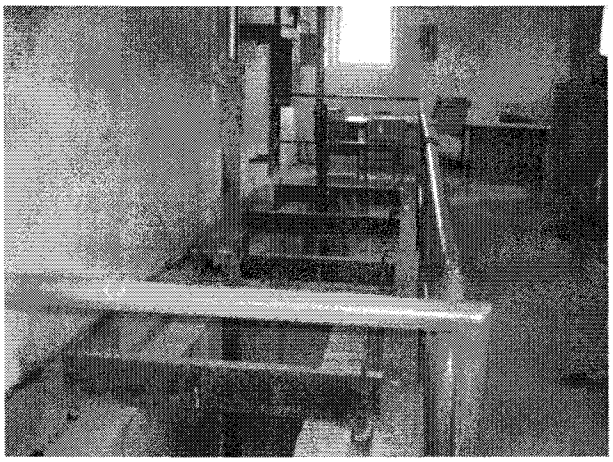
Technical Characteristics

The Kiri Dam is of the rock/earth fill type, 20 meters in height and 1.3 km in length. The width of the dam at its crest is 3.5 meters. Other technical parameters are listed below:

Catchment Area:	55,200 sq. kms
Normal Top Level of Water	170.50 m above sea level
Lowest Draw-Down Level	167.20 m above sea level
Design Inflow	4,250 cub meters/sec
Design Discharge	4,000 cub meters/sec
Maximum Flood Level	171.50 m above sea level
Reservoir Surface Area	107 million sq meters
Live Storage	290 million cubic meters
Dead Storage	325 million cubic meters
Total Reservoir Storage	615 million cubic meters
Spillway Characteristics:	
Type	Concrete
Height	37 m
Scour Sluice Gates	3
Canal Gates	2 (to supply water to the sugar factory)
Estimated Hydro Potential	35-50 MW

KIRI POTENTIAL HYDRO-POWER SITE




Designed to accommodate the later addition of a power plant, the actual construction of the plant was held up in part because of a scarcity of funds, but in part because of a jurisdictional dispute, now settled, between the Federal Government that built the dam for irrigation purposes and the State of Adamawa that wanted to build an off-grid power system for local energy consumption, mostly in and around Yola.. Under the terms of the settlement, the State of Adamawa now has the right to build the hydro facility unencumbered by the Federal Government. However, the hydro facility will be subject to regulatory oversight by the newly created Nigerian Energy Regulatory Commission, as are all power plants in the country exceeding 1 MW of capacity.

Historical Hydrological Data

The Table that follows shows the maximum Peak Inflows and Outflows, and the dates on which these occurred. All water-level measurements are above sea level. The rainy season in the area is from May to September, and the dry season is from October to April. Inflow and outflow rates are regulated to

maintain a minimum water level at the reservoir. Outflows occur as a result of water sent to the Savannah Sugar Plantation and water released downriver to keep the reservoir at a minimum elevation of 168 meters above sea level.

Year	Peak Inflow (cu.m/s)	Peak Outflow (cu.m/s)	Reservoir Level Inflow (ms)	Reservoir Level Outflow (ms)	Date for Inflow Measurement	Date for Outflow Measurement
1994	3142.56	2316.0	170.94	171.11	9/94	9/15/94
1995	1361.96	886.0	168.87	168.5	9/95	8/21/95
1996	1551.62	1371.0	168.89	169.09	8/30/96	9/1/96
1997	1318.08.	874.0	168.02	167.92	8/16/97	8/13/97
1998	1931.21	1671.89	168.55	169.92	9/9/98	9/10/98
1999	1973.99	1338.5	167.78	168.94	9/7/99	9/1/99
2000	2305.09	??	169.52	??	8/21/2000	--
2001	1783.75	1741.25	170.01	169.52	9/7/2001	9/9/2001
2002	990.68	928.83	169.80	??	9/16/2002	9/17/2002
2003	1704.20	1421.46	170.19	170.08	9/9/2003	9/18/2003
2004	4028.42	2052.54	170.19	170.19	8/11/2004	8/11/2004
2005	4227.50	2999.54	171.13	170.05	5/17/2005	8/18/2005

Cost of Project

The overall cost of the project has been estimated at $44 million, based on a conservatively estimated capacity of 35 MW and connection of the power output to the nearby national grid. These costs, and the capacity estimate on which it is based, need to be reviewed by the USTDA Feasibility Study Team. The project costs have been broken down as follows, with dollars shown in millions:

Civil Engineering	$12
Electrical and Mechanical Equipment	28
Transmission Lines and Transformer Stations	3
Environmental Costs	1
Total	**44**

These costs include the conversion of the irrigation dam to accommodate a hydro-power plant, the construction of a 35 MW plant and the installation of transmission and transformer facilities to take the power to be generated to the nearby national power grid

PROJECT SPONSOR'S CAPABILITIES AND COMMITMENT

The State of Adamawa is starved for power. At the present time it has no installed capacity of its own, except for some diesel-powered thermal units in the Capital of Yola, for which fuel supplies have become prohibitively expensive. Beyond that, the electric system in the State of Adamawa is connected to the national power grid by a linear grid system providing power supply to the State through only one

line, as opposed to a circular system that would incorporate a second back-up line from an alternative location. That means that any power loss on the sole supply line to Adamawa will induce a total power loss in the State. So precarious has the situation become that the State is prepared, if absolutely necessary, to construct the Kiri power plant on its own. Moreover, given its vulnerability on the linearly-configured power supply from the national grid, the State would prefer to bring the Kiri power to Yola through a direct transmission line that would bypass the national grid. As required for all power plants exceeding 1 MW in capacity, building the Kiri hydro-facility would require a license from the Nigerian Regulatory Commission, which would not be expected to be withheld as long as the plant adheres to existing regulatory provisions.

The Governor of the State of Adamawa has expressed his commitment to the project in a letter to USTDA, in which he wrote that:

> At present, the electricity supply in Nigeria, and particularly in Adamawa State, is at its lowest and has negatively impacted on the socio-economic activities of the State. We have identified a location, the Kiri Dam,that could be considered for further development as a small/medium hydro-power plant. It is our view that this is worth pursuing as a project that would facilitate our rural electrification program.
>
> It is pertinent to mention that **the proposed project is part of the priority projects of my Administration aimed at promoting the rapid development of the State**.
>
> Signed: Murlala H. Nyako, Governor
> (Emphasis added)

IMPLEMENTATION FINANCING

Clearly, the State of Adamawa has limited resources. Since recent legislation permits the privatization of power generating companies, the emerging Kiri hydro-power plant will either be an independent power producer (IPP) or a public-private partnership (PPP). An IPP would be the preferred solution.

If a U.S. partner can be found, or if significant U.S. equipment goes into the construction of this project, various bilateral and multilateral funding sources may be available in support of the private investor's funding needs, who may also wish to resort to commercial debt or to third-party equity participation. The African Development Bank, the World Bank, and the European Bank for Reconstruction and Development come to mind as important multilateral sources for outside funding. As to unilateral U.S. sources, the following prominent institutions can be of assistance.

- The Overseas Private Investment Corporation (OPIC). This agency provides insurance coverage for currency convertibility, expropriation, and political violence, as well as financing through direct loans and loan guarantees for medium to long-term funding of ventures involving significant equity and/or management participation by U.S. businesses. A visit at the office of Mr. Zhen Han, Senior Investment Officer at the Agency, revealed that Nigeria is eligible for OPIC support should a qualifying project materialize in the electric sector. See the Appendix for Mr. Han's address and phone number and those of Mr. John Richter below.
- The U.S. Export Import Bank (Ex-Im Bank). This agency supports the financing of U.S. goods and services, turning export opportunities into real transactions designed to maintain and create U.S. jobs. The Ex-Im Bank assumes credit and country risks that the private sector may be unable or

unwilling to accept. During a visit at the Ex-Im Bank, Mr. John Richter, Regional Director–Africa, pointed out that the Bank would be interested in power projects in Nigeria, but with qualifications. They would not be able to provide support for the Public Sector in that country. Thus, if the Government of the State of Adamawa (municipal, state or federal) is the obligor, they cannot participate. For a new private-sector project, certain guidelines apply. These guidelines include access to short-term loans only (90 days), which limits their involvement to commercial operations, essentially short-term inventory financing for consumer goods exported from the United States.

The USTDA technical assistance consultants will be held responsible, through appropriate guidance in the terms of reference, to explore these and other multinational and unilateral funding opportunities and to structure their financial offerings along lines that are compatible with international donor practices.

U.S. EXPORT POTENTIAL

Nigeria does not have the heavy industry or technological sophistication to produce the required electrical or mechanical machinery needed for the construction and equipping of the Kiri hydro-electric power plant. That goes for the turbines, alternators, transformers, high-voltage transmission lines and towers, and similar equipment. Thus, with the exception of civil engineering and mechanical construction operations, such as the earth work required for site conversion to hydro-power, water and sewage connections, concrete foundations, etc., all of the required hardware for any of the component projects will have to be imported. If the construction of the proposed Kiri power project is offered on a turn-key basis, the civil engineering and mechanical construction operations will be designed and directed from abroad and, with the exception of local labor, partially imported.

The cost components used in the proposed feasibility study assessment are divided into civil engineering, electrical and mechanical equipment, and transmission lines and transformer stations. These costs will be incurred in the amounts and percentages shown below.

U.S. EXPORT POTENTIAL
KIRI 35 MW HYDRO-ELECTRIC POWER PLANT
Conversion of Retention Dam, Power Plant, Domestic Transmission Lines, etc.

		Export Potential			
	Cost	Total Potential		US Potential, 40-80%	
Component	($ Millions)	%	Potential	Low Estim	High Estim
Civil Engineering	$12.0	20.0%	$2.4	$1.0	$1.9
Electrical and Mechanical Plant Equipment	28.0	80.0%	22.4	9.0	17.9
Transmission and Transformer Stations	3.0	80.0%	2.4	1.0	1.9
Environmental Impact Study	1.0	80.0%	0.8	0.3	0.6
Total	**$44.0**		**$28.0**	**$10.9**	**$22.4**

Civil Engineering is low for a hydro-power plant, since the retention dam exists already and only requires relatively modest modifications. Overall civil engineering will be on the order of 27% of the total project cost of $44.0 million. Most of that, assumed here to be 80% or $9.6 million, will be done with domestic labor and materials. Of the remaining $2.4 million of potential exports, anything between 40 and 80 percent, up to a maximum estimated $1.9 million, will accrue to U.S. goods and services, the latter being mostly in construction management and procurement.

The total export potential for electrical and power plant equipment will be on the order of $22.4 million, with U.S. exports somewhere between $9.0 and $17.9 million. Assuming that power deliveries will be to

the national grid at a distance of one to two kilometers, the cost of $3.0 million makes up a relatively small portion of the total construction cost, for an estimated U.S. export potential of $1.0 to $1.9 million.

The environmental impact statement will be a relatively modest undertaking, as the dam itself has already undergone an environmental assessment, so that the focus here will be on the plant addition and short transmission line. This being a hydro-power plant there will be no noxious emissions. The U.S. export potential associated with the environmental assessment, essentially consulting fees, will be around $0.3 to $0.6 million.

All told, the U.S. export potential of the Kiri hydro-power project has been conservatively estimated to be on the order of $10.9 to $22.4 million.

The electrical equipment for the project and some of the potential U.S. suppliers are:

1.	Medium-Size Hydro Turbines	American Hydro Corporation Voith Siemens
2.	Electrical Systems and Substations	Waukesha Electric Systems
3.	Engineering Services & Construction Management	Montgomery Watson Harza (MWH) Black & Veatch Bechtel
4.	Construction, acquisition, operation of electric generation facilities,	Sithe Global Power Shaw Group
	Potential IPP's	See Appendix B

These suppliers have been advised of the potential construction at Kiri. See Comments in Appendix A under U.S. Suppliers.

FOREIGN COMPETITION AND MARKET ENTRY ISSUES

Based on technological know-how, industrial infrastructures, and market forces, many competing foreign manufacturers have the ability to produce most major industrial pieces of power plant equipment. That would include manufacturers in practically any European nation, Canada, emerging Latin American countries, and in Japan, Singapore, China and South Korea, among others. Nearly all of them have some means of promoting their exports through government assistance programs similar to the U.S. Overseas Private Investment Corporation and the U.S. Export-Import Bank.

Nigeria is a member of the World Trade Organization. The WTO, in its 2005 review of Nigerian trade policies took note that Nigeria had become more restrictive in its trade policy in an attempt to stimulate domestic manufacturing by tightening up its domestic content policies. U.S. Ambassador John Campbell, addressing the Nigerian-American Chamber of Commerce in a follow-up speech in 2006 mentioned sudden changes in product standards and the imposition of destination inspections (as opposed to pre-shipment inspections) as examples of areas where improvement could be achieved.

Still, the United States is, by far, Nigeria's most important trading partner. 52.5% of Nigeria's exports go to the United States, mostly petroleum, with Spain, at 8.2%, following at a distant second place. The United States is second in terms of exports to Nigeria, at 7.3% of Nigerian imports (computers and electronic products, transportation equipment, chemicals, machinery, and crop production), after China at 10.4% (light industrial, mechanical and electrical products). Thus trading is well established between the United States and Nigeria. It is to be expected that the United States will do well on getting a substantial share of power generation and transmission exports to Nigeria, since the number one overall competitor, China, is still focused on meeting competing needs for its own rapid development.

DEVELOPMENTAL IMPACT

USTDA mandates an assessment of the developmental impact of its projects in accordance with the following criteria: infrastructure, market-oriented reforms, human capacity building, technology transfer and productivity improvements, and others. A broad developmental estimate along these lines is provided below, with more detailed assessments to follow as a required topic in the Contractor's technical assistance reports.

1) Infrastructure: The construction of a medium-sized hydro-electric power plant in the far-away and isolated State of Adamawa bordering on Cameroon will achieve two things. It will bring new electric power to a power-starved State, and it will make that State at least partially independent of the one precarious connection it now has with the linearly-configured national power grid. Thus, there will be more power and more reliable power than before. As the Governor of Adamawa pointed out, this will assist in his State's high-priority rural electrification program, opening up new locations and making a substantial contribution to the security of the physical, financial and social infrastructure in a relatively underdeveloped part of the country. Implementation of the Kiri Project will make sure that the newly available power will reach current consumers with fewer disruptions and that it will provide access to new customers who had no electricity before, thereby significantly enhancing their quality of life.
2) Market Oriented Reform: The construction of a 35 MW power plant as an independent power producer will move the State of Adamawa one important step forward in its ongoing industrialization and job creation efforts. As one State in a 36-State Federal Republic, Adamawa does not initiate market-oriented or any other reform on the national level, but the construction of this power plant would be very much in line with such a reform. Nigeria is well on its way towards industrial privatization in general, and its electric-sector privatization in particular, even though substantial difficulties remain to be overcome in the electric sector. USTDA support for the construction of the Kiri Power Plant will make a significant contribution to that development.
3) Human Capacity Building: Revitalizing and expanding the electric power sector by nearly doubling the current electric power supply in Adamawa and by making it more reliable in the process will enhance the development of large-scale agricultural and industrial projects and provide significant employment prospects. The creation of several hundred new jobs through the availability of electric-power manufacturing options is to be expected.
4) Technology Transfer and Productivity Improvements: The opportunity to move from artisan to large-scale production through electrification will significantly improve the productivity of the work force.

IMPACT ON THE ENVIRONMENT

The Kiri site is located in the middle of an agricultural area which is largely tropical grassland containing scattered trees. The region is relatively sparsely populated. There are no national parks or wildlife refuges near it. Hence, no problems are expected in the area of plant or animal endangerment.

As to operational environmental problems, with the exception of solar or wind power which cannot be developed in significant concentrations suitable for delivery to a national grid, or nuclear power which is not a realistic short- or medium-term option in Nigeria, there are no options for the development of a power source outside hydro-power that does not emit green-house gases. Most of Nigeria's future power needs are expected to be met through the construction of gas-fueled power plants, which is the least contaminating of all thermal plants.

There will be no dislocation of people as the retention dam for the plant already exist and no change in the size or elevation of the impoundment lake is planned. The inundated surface area of the reservoir is 107 square kilometers, or roughly 10 by 4 miles, a good part of which is the old riverbed. In a similar vein, the existence of the lake at the proposed site since 1982 will not present a problem regarding ancestral and cultural attachments in the proposed area or historically or culturally significant sites.

On the positive side of the ledger, the reservoir as it exists today is a source of irrigation of nearby sugarcane fields and for water supplies of the Savannah sugar plant, which is the largest employer in the area.

IMPACT ON U.S. LABOR

As mentioned in the Section on U.S. Export Potential, the overall impact of this project will be the potential export of up to $22.4 million dollars worth of U.S. power generating and transmission equipment and associated services. That is the equivalent of providing one year of work for approximately 300 U.S. workers, based on 2005 U.S. GNP and employment data.

While the stimulation of U.S. manufacturing operations and exports will be substantial, there will be no offsetting loss of U.S. labor resulting from the implementation of the recommendations of this USTDA project. The proposed construction of the Kiri power plant, and the expansion of the existing power transmission system in the State of Adamawa is not like building a manufacturing plant in Nigeria that would subsequently produce commodities for export to the United States where they could have been produced by U.S. labor. Hence the development power generation in Nigeria will not give rise to any reduction or outsourcing of U.S. labor.

CONTRACTOR QUALIFICATIONS AND SELECTION CRITERIA

Contractor Qualifications

Given the project objective to assess the feasibility of converting the Kiri irrigation dam to a hydro-power site and constructing a 35 MW hydro-electric power plant and transmission facilities to deliver the electricity to end-users in and around the Capital of Yola, it is recommended that a highly specialized consulting firm with at least 15 years of experience in the field be employed. The consulting firm to be selected will, at a minimum, employ the following key specialists:

- **One full-time Project Manager** who must have an advanced degree (Master's degree in electrical engineering, or a BS degree in electrical engineering with an MBA) and a minimum of 20 years of

experience, or a Bachelor's degree in electrical engineering and a minimum of 25 years of experience. His/her experience must be primarily in power generation and transmission/distribution, with prolonged exposure to hydro-electric power generation. His/her past work must have been with an electric power company at the executive level, or with a consulting firm specializing in or dealing with hydro-power generation. He/she must have a thorough understanding of present-value, rate-of-return, and levelized-cost computer programs. Experience as team leader in at least three projects dealing with power generation in all of its ramifications, including take-off contracts, is indispensable. The Project Manager will assume single-point responsibility for the project. He/she must have a demonstrated ability and proven track record in managing complex industrial/legal projects in foreign environments.

- **One part-time Senior Geologist, Geophysicist or Soil Mechanics Engineer** with a post-graduate degree (an MS in geology/geophysics/soil mechanics) and 15 years of experience in soil stability evaluations related to water dams, or with a BS degree in geology/geophysics/soil mechanics and a minimum of 20 years of such experience. He/she must have worked with a construction company or with a consulting firm specializing in water dams. His/her responsibility on this project will be to review the soil stability data that were used as part of the construction of the Kiri dam and to make sure that the dam will support the proposed conversion to power production.
- **One part-time Senior Finance Specialist** who will evaluate the financial viability of the Kiri hydro-electric power project. Must have an MBA or post-graduate degree in finance and 15 years of experience in analyzing and designing complex financial transactions. The Senior Finance specialist must be familiar with present-value, rate-of-return, and levelized-cost computer programs and must thoroughly understand regulated tariffs and opportunity costs. His/her experience must consist of work in the financial planning department of a large company, or work at a consulting firm specializing in or dealing with complex financial transactions.

Selection Criteria

1) **The Firm, 30%:** Experience and proven ability in managing complex power generation, transmission and distribution projects in international settings. The emphasis will be on quality performance and experience. Specific evaluation factors and their values are listed below:

Firm Evaluation Factors – 30%	Maximum Points
a) Years in Business (since Foundation)	
15 Years	4 Points
20 Years	8 Points
25 Years-Plus	12 Points
b) Leadership in Hydro-Power Projects	
3 Projects	3 Points
5 Projects	9 Points
8 Projects-Plus	12 Points
c) Type of Client	
Experience with Power Utilities	3 Points
Exp. Negotiating with Foreign Governments	6 Points
TOTAL MAXIMUM (30 of 100 Points)	30 Points

2) **The Proposal, 40%:** Approach, methodology, and strategy in meeting the required tasks within the proposed time-line. This includes a review and evaluation of the proposed Kiri hydro-power facility and associated transmission facilities.

Proposal Evaluation Factors – 40%	Maximum Points
a) Approach	10 Points
b) Methodology	15 Points
c) Strategy	15 Points
TOTAL MAXIMUM (40 of 100 Points)	40 Points

3) **Personnel, 30%:** Experience of the Project Manager and the two Senior Specialists listed in the budget. The two most important selection criteria in this category are previous participation in similar projects (maximum 12 points out of 30), and professional experience (9 points). Experience in advising foreign governments is rated higher than corporate consulting experience. The degree is rated lower than other selection criteria.

Personnel Evaluation Factors – 30%	Manager: Maximum Overall Points, 50%	Senior Specialists: Maximum Overall Points, 50%	Average Overall Points
a) Highest Relevant Degree			
BS	1 Point	1 Point	1 Point
MS/MBA	2 Points	2 Points	2 Points
PhD/JD	3 Points	3 Points	3 Points
b) Professional Experience			
15 Years	4 Points	4 Points	4 Points
20 Years	6 Points	6 Points	6 Points
25 Years-Plus	9 Points	9 Points	9 Points
c) Participation in Similar Projects			
1 Project	0 Points	4 Points	4 Points
3 Projects	8 Points	8 Points	8 Points
5 Projects	12 Points	12 Points	12 Points
d) Type of Client			
Individual Firms	3 Points	3 Points	3 Points
Foreign Governments	6 Points	6 Points	6 Points
TOTAL MAXIMUM (30 of 100 Points)	30 Points	30 Points	30 Points

Note: To qualify for consideration of the proposal, the resumes of the Project Manager and the four Senior Specialists, must be submitted in a legally binding form, bearing the individuals' original signatures. No substitution of key professionals will be permitted.

JUSTIFICATION

This project, if implemented, meets an urgent need to stave off electric power black-outs; holds significant promise in terms of economic development for the State of Adamawa, which is located in the remote north-eastern region of Nigeria, and of improved living conditions for its people. The project will provide, directly through work on the plant and transmission facilities, and indirectly through the enhanced availability of electricity, considerable human capacity development, and it has a favorable export potential.

The electric sector in Nigeria generally, and in the State of Adamawa in particular, suffers from inadequate exploitation of its significant power generating potential. At present, the State of Adamawa depends for its power supply on one exclusive transmission line that is part of the national grid. In the event of a failure of that line a total State-wide black-out will occur. The construction of the Kiri power plant will put an end to that precarious power exposure.

Hydro-power plants generally are a hard sell to investors for various reasons, including the high up-front cost of the geotechnical testing expense, the construction of the dam, extensive environmental and archeological assessments, and the assessment of population displacements that are required prior to flooding large surface areas. In the Kiri dam, these studies are either not required or marginalized, since the dam was built a quarter of a century ago, at which time these issues were all addressed. Whether and where these data are still available will be for the Feasibility Study Contractor to determine. One thing is sure, though, the State of Adamawa is desperate to build the plant and will do everything in its power to make any existing data available.

The reservoir has now been in place for a long time and its existence has not generated any problems along the lines indicated above. With the high up-front investments out of the way, it is expected that the cost of the plant will be roughly 50% higher than the equivalent cost of a combined cycle gas fired power plant, but with the highest variable operating cost, the cost of fuel, removed. To be noted is the fact that the original construction of the dam required the construction of roads capable of handling heavy loads, which makes the plant easily accessible to construction equipment. This is definitely not a new site in the deep forest where the building of access roads and of a complete transportation infrastructure places a heavy burden on its cost.

The Kiri plant offers another feature that will go a long way towards dispelling any doubts investors may have concerning the viability of the project. The power plant, once interconnected with the power-starved Capital of Yola, will be producing at or near full capacity from its first day of operations. This will dramatically improve early cash flows, add significant financial protection for the invested capital, and raise the investor's rate of return since the early returns are less heavily discounted. Moreover, the dam has been in existence for a quarter century and is presumably fully amortized by now. If so, the normally very high depreciation charge for the dam no longer appears in its cost structure, which offers the opportunity for reasonable tariffs. In a generally rural setting, that could be a significant advantage.

Another good reason for justifying the Kiri project is the elimination of economic losses that occur every time a power shortage or black-out takes place.

TERMS OF REFERENCE

Task A Purpose and Objective of Study

1) The Contractor shall fully describe the objective of the Study, which is to assess the feasibility of converting an existing irrigation dam on the Gongola River in the State of Adamawa in north-eastern Nigeria to a 35 MW hydroelectric power plant, including the construction of the necessary transformers and a short transmission line to bring the electricity from the site to a nearby grid line.

Task B Technical Assessment

1) The Contractor shall visually inspect the irrigation dam on location and review its original design drawings and the water flow data that are available on site. The Grantee has agreed to make the water flow data available to the Contractor.
2) The Contractor shall asses the available head (water height) at the site.
3) Given the head and water quantity available for power generation, the Contractor shall calculate the average yearly capacity, in MW, of the power plant, and the minimum available capacity during the dry season.
4) The Contractor shall develop pre-engineering designs of the physical configuration of the generating facility and the civil works required to effect the conversion from irrigation only to irrigation plus power generation. These designs shall be of sufficient detail to develop reasonably accurate cost estimates, but not at the detail level to serve as blueprints for actual construction. This task shall also include an assessment of whether it is technically feasible to raise the head of the plant, as well as an assessment of whether and where a head race is advisable.
5) With the physical size and layout of the power plant established, the Contractor shall determine the size and type of the turbines and generators to be installed, as well as the attendant electrical and mechanical equipment including the switchyard, the transmission line, and the hook-up to the nearby national grid.
6) The Contractor shall check the physical condition and size of the receiving transmission line to assess whether it will be large enough and in sufficiently good condition to take on the power from the new plant. If not, the Contractor shall specify the required line repairs or additions that will be needed to evacuate the power to the City of Yola.
7) The Contractor shall prepare an alternative analysis of evacuating the new power off-grid to the City of Yola.
8) The Contractor shall also prepare a flow-stability analysis under the above-referenced grid-evacuation and off-grid-evacuation scenarios.
9) The Contractor shall develop tentative engineering drawings to be used as guides in the conversion of the irrigation dam to power generation and in the construction of the power plant proper.
10) The Contractor shall develop a cost estimate for the dam conversion and the plant construction under both the grid-evacuation and the off-grid-evacuation scenarios and make recommendations to the Grantee regarding the advantages and disadvantages of these two options.
11) Once the Grantee makes a decision between the choices of evacuation through the national grid or through an off-grid line, the Contractor shall prepare final drawings and cost estimates for further economic and financial evaluations.

Task C Economic Analysis of the Project

1) Under this Task, the Contractor shall perform a cash flow analysis, describe current market conditions, assist in the development of power supply and purchase agreements, and assess the merit of competing alternative methods of achieving the same or similar results.
2) The Contractor shall use a cash flow computer model for the following subtasks:
   a) The Contractor shall determine the annual and cumulative revenues accruing to the federal and local governments and to the corporate investor over the life span of the electrical equipment (30 years), as well as the investor's internal rate of return on equity-only and on leveraged equity investments, as needed, following completion of the Project.
   b) The Contractor's computer model shall reflect current and projected future prices. The Contractor shall also consider avoided costs due to fuel-oil cost savings on self-generating equipment, as well as consider economic costs associated with reduced power deliveries and black-outs that reduce current Gross State Product and retard future economic growth.
   c) The Contractor's power plant computer model shall also be used for the transmission line. Scenario runs around the transmission line will allow the Contractor to evaluate the cost and potential tariffs on the system; the Contractor shall fully describe evaluated costs and potential tariff requirements.
3) The Contractor shall analyze market conditions in the region to determine the absorptive capacity of end-users at the calculated cost-recovery prices or at the tariffs set by regulation.
4) The Contractor shall develop draft power supply and purchase agreements between the various parties that are likely to be involved in commercial electricity transactions related to the Project. However, the Contractor will not be a party to actual negotiations and will not participate in the actual drafting of the final agreements, since these are typically negotiated after presentation of the Project to interested investors.
5) The Contractor shall develop cost estimates and draft tender documents for the Project and its sub-components, including the following:
   a) Conversion of the irrigation dam and construction of the power plant, including development of draft tender documents as an independent power plant ("IPP") or public-private partnership ("PPP").
   b) Construction/reinforcement/rehabilitation of relevant portions of the national grid or, depending on the routing decision taken under Task B-11, construction of the off-grid evacuation line to Yola.
6) The two subcomponents, the dam conversion and the plant construction on one hand, and the off-grid power line construction on the other, will essentially be configured as BOOTs. The length of the operational phase, to be determined by licensing agreements, are expected to be line with prevailing regulations.

Task D Financial Analysis of the Project

1) In designing the debt structure, co-financing of loans, and loan guarantees for the Project, the Contractor shall consult with potential public and private financing organizations, including the World Bank and the European Bank for Reconstruction and Development, and with relevant regional multilateral development banks such as the African Development Bank. The Contractor shall also consult with bilateral funding institutions, such as the U.S. Ex-Im Bank and the Overseas Private Investment Corporation (OPIC).
2) For the power plant, transmission lines and related equipment, the Contractor shall use a computer spreadsheet model to run a sensitivity analysis for different financial configurations, including:
   a) Off-take commitments from various parties, with terms and pricing that vary with time.

b) Debt sourced from multiple parties, with terms and pricing that vary with time and by party, and with priority of payment by party or group of parties.
c) Equity and subordinated debt sourced from multiple parties, with terms and pricing that vary with time and party, and with priority of payment by party or group of parties.

3) The Contractor shall present various interim runs over time and shall develop not less than three alternative financial structures for final presentation, using in-put assumptions that have been discussed with and agreed to by the Grantee.
4) The Contractor shall make available in a useable format to the Grantee all copies of such analytical models that were developed or generated during this Study.

Task E Appropriate Environmental Analysis of the Project

1) The Contractor shall perform a preliminary review of the Project's anticipated social and environmental impacts with reference to Host Country requirements (municipal, state, or federal) and in line with the guidelines of multilateral lending agencies, such as the World Bank. These reviews shall identify potentially negative impacts, discuss the extent to which they can be mitigated, and outline plans for a more detailed environmental and social impact assessment prior to start-up of construction operations.
2) Even the full environmental impact study to be done prior to start-up will be a fraction of the cost of a comprehensive study for a green-field hydroelectric facility, since it will be limited to the power plant proper, leaving out the more expensive environmental assessment of constructing an impoundment dam.

Task F Review of Regulatory Issues Related to the Project

1) The Contractor shall develop its construction plans in accordance with existing and emerging regulations. While the procurement of a generating license will be the obligation of the ultimate investor, the Contractor shall outline the steps that need to be followed in securing the required generation and transmission licenses.

Task G Analysis of Key Host Country Development Impacts

1) The Contractor shall discuss the developmental impact of the Project in terms of USTDA's guidelines covering infrastructure, human capacity building, technology transfer and productivity improvement, and/or market-oriented reforms.
2) While specific focus shall be placed on the immediate impact of the Project covered under the feasibility study, the Contractor's analysis shall consider and describe any additional developmental benefits that may result from the Project's implementation, including spin-off and demonstration effects. The analysis shall be an assessment of each of the following categories with respect to the Project's overall development impact:
   a) Infrastructure: The Contractor shall provide a statement on the infrastructure impact in the State of Adamawa, giving a brief synopsis. This statement shall include an estimate of new power that will become available, the number and severity of blackouts that will be eliminated, the cost savings to the State as a result of such eliminations and of the use of water in lieu of increasingly expensive hydrocarbon fuels to generate electricity.
   b) Market- Oriented Reform: The Contractor shall provide a description of new or pending regulations, laws, or institutional changes and the effect they will likely have on the development

of the Project. In particular, the Contractor shall describe the recently established regulatory reform in Nigeria and how it would affect operations at the proposed Project.

c) Human Capacity Building: The Contractor shall assess the number and types of local positions that will be needed to construct and operate the proposed Project and the expanded transmission and distribution systems in and around Yola. The Contractor shall describe training programs that new power plant employees will receive once the plant is in operation.

d) Technology Transfer and Productivity Enhancement: The Contractor shall provide a description of any advanced technologies that would be utilized as a result of the Project, as well as a description of efficiency gains that the more intensive and wide-spread use of electricity will provide to the State of Adamawa.

e) Other: Contractor shall make reference to the State of Adamawa's revenue gains as well as income gains of the population that will result from the power plant, directly or through spill-over effects.

Task H U.S. Sources of Supply

1) While aiming at optimum specifications and characteristics for the project, the Contractor shall provide an assessment of the availability of potential U.S. services and equipment needed in the construction of the power plant and the transmission system. The Contractor shall list the business names, points of contact, addresses, telephone-, e-mail-, and fax-numbers of principal prospective U.S. suppliers for each source.
2) The Contractor shall provide a list of potential U.S. investors and IPP developers and develop an investment circular that could be used to market the Project to them. The circular shall also be made available to the local IPP licensees listed in Appendix B.

Task I Implementation Plan

1) The Contractor shall prepare an implementation plan that shall list the next steps to be taken after the completion of the Study and prior to start-up of the Project. This implementation plan shall include, but not necessarily be limited to, the following:
   a) Discussion regarding the need for and contents of an environmental impact assessment for the plant site and for a new transmission corridor. This discussion shall also include a cost estimate of these studies;
   b) A listing of permits, public hearings, and similar proceedings that will be required during the Project approval process.

Task J Final Report/Deliverables

1) The Contractor shall prepare a Final Report in accordance with relevant provisions of the Grant Agreement. Each of the tasks in the above terms of reference must be distinctly set forth in the Final Report in a substantive and comprehensive manner.
2) The Contractor shall prepare a Power Point Presentation for potential financial institutions and investors describing the Project. The purpose of the presentation shall be to introduce the Project to interested investors and shall include the Project's technical, economic, and financial aspects, including tender documents.

STUDY BUDGET

A budget for the implementation of a USTDA feasibility study in support of the Government of the State of Adamawa's Kiri hydro-electric power plant has been prepared from examination of the proposed terms of reference, and by costing out the required resources. The project includes the conversion of the Kiri irrigation dam to a power site, the construction of a 35 MW hydro-electric power plant, and the construction of a connecting power line to the nearby national transmission grid. If successful, this project will significantly increase the power supply to and avert blackouts in the State of Adamawa.

The Kiri feasibility study requires input from various disciplines. An electrical power engineer who will also be the team manager will be spending full time on the 5-month project. He or she will be supported by a senior geologist/geophysicist (3.5 months) and by a senior financial analyst (3.5 months).

There is every reason to believe that this will be a successful project. The existing power shortage in the State of Adamawa will be alleviated by the addition of the Kiri plant to its power sources. It will also guarantee full electricity take-off from the first day the plant is put on line.

A separate travel budget provides a detailed picture of when and where the U.S. consultants are scheduled to go. The team leader will be going to the site near Yola three times during the five-month study period. The geologist/geophysicist will be working on the site two times and the financial analyst will be in Yola one time, for the delivery of the final presentation to the Government of Yola. While within USTDA guidelines, the travel budget of $38,540 is somewhat higher than normal. This reflects the remote location of the Kiri site, which it takes three day to reach, including a rest stop in Abuja that will be required since same-day connections are not available in that city.

The budget as a whole has been set at $467,700. For the type of study at hand, this is relatively low. It would have been considerably higher if the retention dam had not been in existence and in operation for a quarter of a century.

NIGERIA POWER SECTOR FEASIBILITY STUDY - KIRI HYDRO-POWER PLANT

TASK DESCRIPTIONS		LABOR IN PERSON DAYS										LABOR RECAP BY TASK		TRIP RECAP BY TASK		
DISCIPLINE		Project Manager Electrical Engineer	Senior Geologist Geophysicist	Senior Finance Specialist	Junior General Research Analyst	Report Editor						TOTAL DAYS	LABOR COST	TRIPS	TRIP DAYS	TRIP COST
TASK	TASK NAME															
A	Purpose and Objective of Study	3.0										3.0	$3,900			
B	Technical Assessment	60.0	50.0		10.0							120.0	$146,000			
C	Economic Analysis	5.0	5.0	30.0	10.0							50.0	$56,500			
D	Financial Analysis	5.0	5.0	30.0	10.0							50.0	$56,500			
E	Appropriate Environmental Analysis	5.0	5.0		5.0							15.0	$16,500			
F	Review of Regulatory Issues	5.0			5.0							10.0	$10,500			
G	Key Host Country Development Impacts	5.0			5.0							10.0	$10,500			
H	Sources of Supplies	5.0			5.0							10.0	$10,500			
I	Implementation Plan / Follow-up Action	10.0			5.0							15.0	$17,000			
J	Final Report / Deliverables	7.0	5.0	10.0	5.0	70.0						97.0	$94,100			
	LABOR IN PERSON DAYS	110.0	70.0	70.0	60.0	70.0						380.0	$422,000			
												380.0				
											Total Labor Cost		$422,000			
											Total Trips and Days			3	18	
											Total Trip Costs					$38,540

LABOR INCLUDING OVERHEAD & GENERAL ADMINISTRATIVE

												TOTAL LABOR COST
DAILY RATE:	$1,300	$1,200	$1,200	$800	$900							
DAILY RATE:												
TOTAL LABOR:	$143,000	$84,000	$84,000	$48,000	$63,000							$422,000
TOTAL LABOR:												$0
												$422,000

For Detals on Trip Costs, See Companion Table

OTHER DIRECT COSTS (ODCs)

Outside Consultants				
Labor Categories: US Nationals	Average Fully Loaded Daily Rate	Person Days	Cost Extension	Totals
Subtotal Labor				
Labor Categories: Host Country Nationals	Average Fully Loaded Daily Rate	Person Days	Cost Extension	Totals
Translator				
Subtotal Labor				
Other Direct Costs				
Ground Travel				
Per Diem				
Misc Costs Inc. Tel, Fax, Courier				
Data Fees				
Subtotal Other Direct Costs				
TOTAL OUTSIDE CONSULTANTS:				

0.0% Local Content

Miscellaneous			
	Defense Base Act	Medevac	Total
Insurance	350	200	550
Vaccinations			800
Visas			600
Other			1210
			3,160

	Number	Unit	Cost/Unit	Totals	
Outside Consultants					
Air Fare, Incl. Airport Taxis				23,400	Economy Class
Per Diem in Transit				1,476	
Per Diem on Location				13,164	Linked to Travel Budget
Local Taxis				500	
Misc. Incl. Tel, Fax, Visas, Insur, Vaccination, Airport Departure Tax				3,160	
Producing and Printing Report				4,000	
TOTAL ODC's				$45,700	

41,700

Total ODC (mostly travel related) is $42,500
That is 9.1% of total cost, i.e., well within USTDA Guidelines and reasonable. given Yola's remote location.

TOTAL PROJECT COST	$467,700

NIGERIA POWER SECTOR FEASIBILITY STUDY BUDGET - TRAVEL DETAILS

KIRI HYDRO-POWER PLANT

Traveler	Task	Total Trips	Trips Nbr	Trip Purpose	Trip Location	Length Days	Per Diem in Transit To Nigeria Days	To Nigeria Dollars	From Nigeria Days	From Nigeria Dollars	Per Diem In Nigeria Days	In Nigeria Dollars	Air Fare & Airp. Taxi Dollars	Local Taxis Days	Local Taxis Dollars	Totals
International Travel																
Project Manager	Overall Coordination and Consultation with Grantee	3	1	Initial Set-Up,	Yola, Adamawa State	16	2	198	1	48	13	3,062	3,900	13	260	
			2	Mid-Term Progress Report	Yola	9	2	198	1	48	6	1,760	3,900	6	120	
			3	Final Presentation	Yola	9	2	198	1	48	6	1,760	3,900	6	120	
					Totals	**34**	**6**	**594**	**3**	**144**	**25**	**6,582**	**11,700**	**25**	**500**	**19,520**
Senior Geophysicist	Dam Safety - Design	2	1	Initial Inspection, Civil Works Design, Soil Stability	Yola	16	2	198	1	48	13	3,062	3,900			
			2	Final Presentation	Yola	9	2	198	1	48	6	1,760	3,900			
					Totals	**25**	**4**	**396**	**2**	**96**	**19**	**4,822**	**7,800**			**13,114**
Senior Finance Specialist	Retention Dam, Civil Works	1	1	Final Presentation, Economic, Financial Analysis	Yola	**9**	**2**	**198**	**1**	**48**	**6**	**1,760**	**3,900**			**5,906**
Total U.S. Consultant Travel to Cameroon		**6**			**Overall Totals**	**68**	**12**	**1,188**	**6**	**288**	**50**	**13,164**	**23,400**	**25**	**500**	**38,540**

Note 1: On travel to and from Yola, need one night's lay-over in Abuja. Used two days from U.S. to Abuja and one day for return trip from Abuja.
Note 2: Per Diem while in transit equals three quarter of meals and incidentals at destination point, i.e., $.75*132*2 going and $.75*64 returning.
Note 3: Per Diem on location includes 2 nights in Abuja, rest in Yola and Kiri for each trip.
Note 4: Local Taxis = $20/Day for Group in Yola.
Note 5: Air fare includes roundtrips Abuja-Yola at $400 per trip.
Note 6: Trip #1: 3 travelers, Trip #2, 2 Travelers, Trip #3, 1 Traveler.

Nigeria Trip Per Diems

	Maximum Lodging	Meals & Incidentals	Total
Abuja	376	132	508
Lagos	265	118	383
Other	116	70	186
Washington, DC		64	

NIGERIA POWER SECTOR FEASIBILLITY STUDY - TIME LINE

KIRI HYDRO-POWER PLANT

		TIME																	
	MONTHS	1				2				3				4				5	
TASK	WEEKS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TASK A - PURPOSE AND OBJECTIVE OF STUDY																			
TASK B - TECHNICAL ASSESSMENT																			
TASK C - ECONOMIC ANALYSIS																			
TASK D - FINANCIAL ANALYSIS																			
TASK E - APPROPRIATE ENVIRONMENTAL ANALYSIS																			
TASK F - REGULATORY ISSUES																			
TASK G - DEVELOPMENTAL IMPACT																			
TASK H - U.S. SOURCES OF SUPPLY																			
TASK I - IMPLEMENTATION PLAN																			
TASK J - FINAL REPORT / DELIVERABLES																			

RECOMMENDATIONS

The proposed feasibility study, if approved and successful, will lead to the construction of a 35 MW hydro-electric power generating plant, the Kiri plant, and associated transmission facilities that will substantially improve the power supply situation in the State of Adamawa. Not only will it provide more power to the State, it will also make the power supply, which now depends on one single and somewhat fragile transmission line, more reliable.

Economic success of the venture is significantly enhanced by the fact that the power-starved State of Adamawa will take delivery at full capacity from the first day of the plant's generation operations. This and the fact that most of the hydro part of the plant already exists, which results in substantial cost savings, should make the dam attractive to investors.

The impact on developmental growth in the State of Adamawa that will be derived from this project goes beyond the mere accessibility to electricity and improvement in the quality of life that comes with it. New jobs will be created in industries that will have a chance to grow in a reliable power environment.

Perhaps the greatest contribution of this project is that it will go a long way in stopping costly power black-outs by making the State's power supply more reliable to those who now have access to it and by providing new access to untold people who never had the luxury of having electricity at their disposal by the mere switch of a button. Finally, the estimated boost in U.S. equipment exports to Nigeria resulting from the Kiri project ranges from $11-$22 million, or 22 to 44 times the USTDA investment.

Based on the developmental benefits that will accrue to the State of Adamawa by virtue of the development of the Kiri hydro-electric power plant, and on a review of USTDA's other investment criteria, it is recommended that this project, estimated to cost $467,700, be approved.

PROJECT PORTFOLIO ASSESSMENT

Other potential projects that have been discussed at various levels of intensity while in Nigeria include the following:

1. Private –Public Partnerships (PPP) Framework for the Development of overall energy sector in Nigeria

The request for assistance came from the Permanent Secretary of the Ministry of Energy (Power) Ministry, Dr. A. Aliyu, who had been under the impression that the USTDA team had come for the express purpose of addressing this issue. It appears that this is a matter to which the Ministry attaches considerable importance. There was no written scope of work, but from the discussion that developed, it appeared that Dr. Aliyu meant for the PPP framework to be designed to include directives that would facilitate the involvement of the private sectors to complement government's efforts in the development of all energy resources (Gas, Coal, Renewables and Power Development) and infrastructure such as for gas and power transmission. Among the options being considered that could involve the private sector are: Build ,Own and Operate (BOO); Build ,Own and Transfer (BOT); Build, Own, Operate and Transfer (BOOT); Rehabilitate, Operate and Transfer (ROT), Contractor Managed activities ,and other such combinations.

Furthermore, there seems to be a growing awareness in public policy circles that the relative abundance of renewable energy sources such as wind, solar, and others, could be an interesting economical resource alternative to natural gas for power generation, and hence should be developed.

While the Electric Power Sector Reform Act of 2005 envisions the operation of the transition system or systems by licensees, no transmission license can be found among the 27 licenses awarded to date. Dr. Aliyu's wish to develop a framework for transmission PPP's apparently is his way of dealing with the problem.

It is the understanding of the Definitional Mission Team that the government has made a formal request through the American Embassy for USTDA assistance in developing this framework. The mission supports this request and considers it urgently needed for the sector. It would provide focus, encourage private sector involvement and hence assure efficient and cost effective implementation of projects and transfer of technology.

2. Waste Management System in the City of Kaduna

This request was made to the Mission Team by the Governor of the State of Kaduna, HE Arc. Mohammed Namadi Sambo. With the constant migration of people from the rural areas of the state to the Capital City of Kaduna (same name as the state) the issue of waste management in the city is becoming difficult to contain effectively, and it is creating a health hazard. The Governor, who is an who is an architect by profession, would like assistance in evaluating the extent of the problem and in recommending viable options for addressing it. His vision of a waste management system includes the systematic collection of trash, burning the flammable part of it for steam and power generation, and the development of a modern landfill for disposal of the rest. Before leaving Nigeria, the office of the governor confirmed that an official request for assistance has been sent to USTDA for consideration. The mission supports this request and believes that the Kaduna State could benefit in the application of

modern American waste management technology and expertise in addressing the problem and training the locals to manage the program.

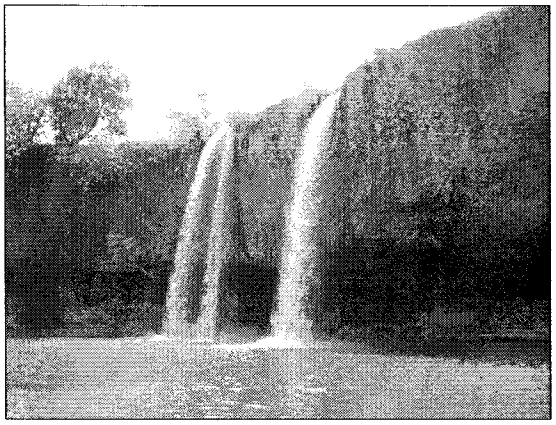
3. Small Hydro-Power Plant

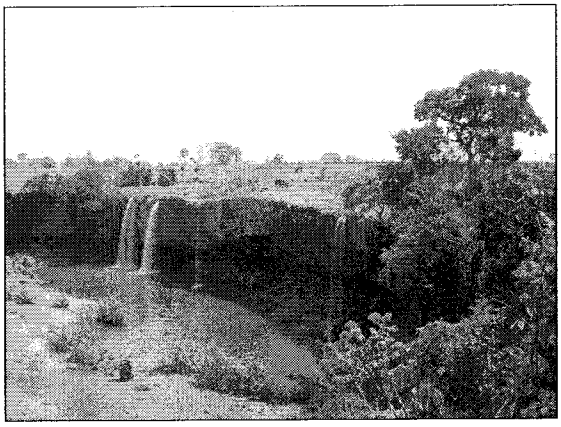
One of the targeted projects under the scope of work for the Definition mission was the inspection and development of recommendations regarding the Gurara hydro power site in Kaduna State as a potential candidate for the construction of a hydro-power generation plant. However, by the time the USTDA Team arrived in Kaduna, the Governor had already begun the project, which was by then 70% - 80% complete. The civil works had been completed and work was in progress to build a power plant using Italian equipment to generate about 35 MW..

The Governor pointed out that there are other promising sites in the State that the Team should visit and evaluate for development. of hydro power. The mission could only visit a few sites. Of the four sites that were visited at the Governor's suggestion, one, the Watsirga Waterfall stood out as a potentially viable candidate. The Watsirga site is discussed briefly below as a potential site .

4. The Watsirga Waterfall

The Watsirga Waterfall on the Kogun River is located near the town of Kagoro by Kafanchan. The pictures below show water spilling over an escarpment approximately 15 meters in height. The photos were taken towards the end of the dry season, i.e., at or near minimum seasonal water flows. The site is close to a black-topped highway and a railroad track and, therefore, readily accessible with heavy equipment.





A water station is located some 100 meters upriver from the fall, where a weir impounds the water to a height of a meter or so to allow the stream to be tapped for drinking water. Outflow to the water treatment plant is minimal. Personnel at the water station confirmed that the situation depicted above shows the water flow about as low as it ever gets.

Unfortunately, the personnel at the water station had not taken water flow measurements, so that a reasonable determination regarding the merit of constructing a small hydro-power plant could not be made. There is a possibility that water level measurements taken at the weir, combined with concurrent water velocity assessments, are accurate enough for a go/no-go decision on the plant. If so, such measurements will need to be taken for at least a year before a reasonable decision can be made.

From mere visual observation, it would appear that the hydro-plant capacity would be around 10-15 MW, which would be a welcome contribution to the development of rural power in the region. The people we talked to seemed to be in favor of such a development.

An attempt is being made by follow-up E-Mail to determine if meaningful data can be collected and, if so, if the State of Kaduna is prepared to make the necessary measurements over the next year. If these data confirm that the Watsirga fall is a viable hydro-power site, it would be the Team's recommendation to do a Definitional Mission at that time.

5 Assistance for Feasibility Study for an IPP Investor:

Anita Energy Limited, one of the private sector IPP investors that was granted a license recently for constructing a 320 MW gas-fueled thermal plant has requested for USTDA assistance in appointing and funding a reputable American consultant that could help develop several economic models for the financing and management of the power plant. Specific items to be considered include: (i) a bankable financial plan for the plant; (ii) a revenue cycle management program; (iii) customer relationship and a pre-paid metering system for bill collection; and (iv) an Environmental Impact Assessment. The mission advised Mr. Tony Hicks, one of the Executive Directors of Anita Energy, to send an official request directly to the USTDA office.

In light of the discussions held with several licensed local IPP investors, it seems that most of these licensees do not have the technical expertise easily available to them to undertake the necessary feasibility for their projects. In this regard, the mission advises that USTDA may consider organizing a workshop in Nigeria for the IPP investors to cover some of the issues raised by Anita Energy.

APPENDIX A

LIST OF CONTACTS

In Alphabetic Order (Last Names), By Organization

USTDA Officials

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Arlington, VA 22209-3901
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Washington, DC 20527
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Mr. John Richter
Regional Director, Africa
Ex-Im Bank
811 Vermont Ave. N.W.
Washington, DC 20571
Tel: 202 565-3903
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U.S. Officials Nigeria

Carolyn Jensen
Political/Economic Section
US Embassy Abuja
Cell: 07030649734

Nigerian Federal Government Officials

Samuel John Agbogun
Director, Electric Power
Bureau of Public Enterprises
11 Osun Crescent
Off Ibrahim Babangida Way
Maitama District
P. M. B. 442
Garki – Abuja
Tel: 09-670-3297
Cell: 08033007082
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7th Floor, Block D, NNPC Towers
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Transmission Company of Nigeria
No. 14 Zambezi Crescent
Maitama-Abuja
Tel: 234 9 413-5536
Cell: 0803 308 2619
Eml: asabada@gmail.com

Waziri Zanna Laisu
Head, HIIC Unit
Nigerian Investment Promotion Commission
Plot 1181, Aguiyi-Ironsi Street
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Engr. Dr. J. O. Makoju
Special Advisor to the President on Electric Power
BLK 4B, Rm 17
Federaql Secretariat Complex
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Director, Electrical Inspectorate Services
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Rev. Engr. Yemi Ojosu
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Energy Commission of Nigeria
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NERC

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Usman Abba Arabi

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Ikotun Omotomilola Tolulope
Legal, Licensing & Enforcement
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Kaduna State

Mamuda Abdullahi
Special Advisor to the Executive Governor of Kaduna State
Hydro-Power Generation and Transmission
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Eml: maharende@yahoo.com

Hon. Tsashiru Bako
Commissioner for Water Resources
Ministry of Water Resources
Kaduna State

State Secretariat
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Kaduna
Cell: 0802 334 0881

Arc. Mohammed Namadi Sambo
Executive Governor of Kaduna State
Sir Kashim Ibrahim House
Tel: 062 417817
Commissioner for Water Resources
Ministry of Water Resources
Kaduna State
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Nigeria Other

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Abuja
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234 80 521 92 854 (Nigeria)
Cell: 0803 521 92854
Eml: sogie@global2i.com

Uche Ofili
President CEO
Softcom
7 Bola Ajibola Street
Off Allen Avenue
Ikeja
Cell: 0703 405 9900
Eml: uche@softcomng.com

US Suppliers

American Hydro Corporation
Mostly modernizes, upgrades and rehabilitates hydro-turbines in U.S., Canada and Latin America. Also builds new turbines, but not many. Can design and build in U.S. Kaplan, Propeller, Francis and pump/turbines up to the largest sizes. Has 50% of U.S and Canadian upgrade market. Will consider opportunities for new construction in Africa, but with caution. "Outside our comfort zone". Comfortable with Ex-Im Bank.

Doug Miller, Manager of Foreign Sales
American Hydro Corporation
135 Stonewood Road
York, PA 17402
Tel: (717) 755-5300
Eml: dmiller@ahydro.com

Voith-Siemens
Produces hydro-turbines in Germany and York, Pa, USA. Will commit to build USTDA-generated turbines in Pennsylvania for job creation.

Gregory Snyder (Gregory.Snyder@vs-hydro.com)
Eastern Regional Manager
Tel: (717) 792-7137, and
Jeremy Smith (jeremy.smith@vs-hydro.com)
Product Sales Manager
Tel: (717) 792-7868

General Electric Turbine Manufacturer
Mark Digby - Contacted and sent material 3/24
Region Executive – Africa
GE Energy Global Sales
P O Box 181
Maitland, Cape Town 7404
South Africa
Tel: +27-21-506-6045
Cell: +27 82 805 1833
Eml: Mark.Digby@ge.com
Victor Orlov with GE Responded: (vivtor.orlov@ge.co,, Tel +44 (0) 1302-732 207). He advised that Francis turbines would be manufactured in Brazil

Younis Ehab - Contacted
GE Energy Global Sales
Power Generation Sales Leader
Based in Cairo
Eml: ehab.younis@ge.com

SPX, Parent of Waukesha Electric Systems Contacted and mailed material 3/24
They would be subcontractors to on electrical systems of hydro-electric plant. I called and got another name. Asked party to call back. No response. Mailed Executive Summary anyhow.
Mr. Larry Kriege
Manager, Transformers
Medium- and large-power transformers and accessories
400 S Prairie Ave
Waukesha, WI 53186
Tel: (262) 547-0121 Extension 1219
Eml: larry.kriege@waukesha.spx.com

Montgomery Watson Harza
Asset Management, Construction Management, Engineering Design Services, Design-Build Services.
I called Norman Bishop. He is considering going to Abuja. Is looking at Nigeria, but not 100% sure he will go for Kiri. Very Interested.
Mr. Norman A. Bishop Contacted - Sent material 3/24
Vice President
Director of International Hydro
MWH Americas, Inc.
175 West Jackson blvd, Suite 1900
Chicago, 60604-2814
Tel: 312-831-3515

Cell: 1+720 320 3123
Fax: 312-831-3999
Eml: norman.bishop@mwhglobal.com

Black and Veatch Contacted and sent material 3/24
Engineering, technology, consulting and construction services in power generation, power delivery and hydrocarbon process industries.
I called Slavin and got Oren Gruber instead (gruberol@bv.com). "Very" interested.
Mr. Roger Slavin
VP Business Development
1300 North 17th Street, Suite 1010
Arlington, VA 22209
Tel: 703-243-0938
Eml: slavinr@bv.com

Sithe Global Power Contacted and sent material 3/24
Development, construction, acquisition and operation of electric generation facilities throughout the world.
I called Carmine. He said they are mostly interested in large facilities, 150 MW-range.
Mr. Carmine Farnan
Sithe Global Power, LLC
245 Park Avenue
38th Floor
New York, NY 10167
Tel: 212-351-0041
Eml: farnan@sitheglobal.com

Bechtel Contacted and sent material 3/25
Construction and construction management, project financing, engineering design, procurement, and project management.
Mr. Tim Statton
President, Power Division
5275 Westview Drive
Frederick, MD 21706
Tel: 301-228-6006
Fax: 301-695-4448
Eml: tstatton@bechtel.com
sgregian@bechtel.com (Copy sent to Secretary)

The Shaw Group Left message and sent material
Formerly Shaw Stone and Webster
Engineering, design, construction, and maintenance services to the power industry. Through its wholly-owned subsidiary, Shaw Capital, Inc., Shaw evaluates, arranges financings for, and invests in opportunities in energy and infrastructure markets.
I called and got Mike Wooten instead (704-343-7500).
Mr. Monty Glover
President, Shaw Fossil Power
The Shaw Group Inc.
4171 Essen Lane
Baton Rouge, Louisiana 70809
USA
Tel: 282-368-3860
Eml: monty.glover@shawgrp.com

APPENDIX B

LIST OF IPP INVESTORS, ADDRESSES AND CONTACT INFORMATION

The attached list includes the names and contact addresses of IPP investors, investment banking and financial institutions and public sector institutions that are directly involved in power production activities in Nigeria.

The list is divided into three parts. Part A, contains the list of IPP investors and include those private sector companies (local and foreign) that were recently (2006/2007) awarded licenses to generate power by the Nigerian Electricity Regulatory Commission (NERC). These companies are also members of the private sector IPP Investors and Operators Forum that has been independently created to assist members address common issues in the implementation and financing of IPP projects in Nigeria.

Part B contains a list of public sector institutions, while Part C contains a list of investment banks and financial institutions. Regarding the banks, the list shown contains those banks that are either currently involved in financing private IPPs or have interest s in being involved in the future.

(A) Private IPP Investors

	COMPANY NAME	PLANT SIZE (MW)	CONTACT DETAILS OF LICENSEE
1.	Anita Energy Ltd	90	Mr. Ilori Olusegun –General Manager Anita Energy Ltd 5,Owena Street, Sani Abacha Estate Wuse Zone 4, Abuja,Nigeria Tel: 234-8052667248 Email : **anitaenergy_project@yahoo.co.uk** ***Also***:--Mr. Toni Osagie Hicks, Director Tel: 234-8052667248 Email: **hicks@hyperie.com**
2	Lotus & Bresson Power Company Ltd	60	Folake Okwego Lotus & Bresson Power Company Ltd No.16 Karaye Close Off Amurie Omanje Street Off Samuel Ladoke Akintola Boulevad Garki II, Abuja, Nigeria Tel:234-9-2343735; 234-0-8057225863 Email: **flakyde@yahoo.com**
3	Energy Company of Nigeria (NEGRIS)	140	Mr. Musa Ojeifo, CEO Energy Company of Nigeria (NEGRIS) Amethyst Block (2nd Floor) All Seasons Plaza 24 Lateef Jakande Street Agidingbi- Ikeja Lagos Tel: 234-1-2301006; 234-0-8043986 Email: **musa.ojeifo @negringroup.com**
4	Ethiope Energy Ltd	2800	Mr. Ifidon Okaisabor Managing Director P.O.Box 7086 267 Trans Amadi Industrial Layout Port Harcout Rivers state Tel: 234-0-8038904949 Email: **iokaisabor@yahoo.co.uk**

5	Farm Electric Supply Ltd Farm Electric Supply Ltd	150	Mr.Alistair Morrison , Managing Director Farm electric Supply Limited Behind Otta general hospital Idi-Iroko Road, Ota, Ogun-State, Nigeria Tel: 234-0-39-722-420; Email: **Alistair.morrison@farmelectric.com** ***Also:-*** Mr. Kola Adesina Tel: 234-0-8035381713 Email: **kola.adesina@farmelectric.com**
6	First Independent Power Company Ltd.	(3) Plants: 95,136,150	Mr. I.E.O.Samuel Managing Director First independent Power Company Ltd 6A Abana Street Old G.R.A. Port Harcourt Rivers State Tel: 234-0-84-750838; 234-0- 8080256218 Email: **infofipco@yahoo.com**
7	Geometric Power Limited	140	Professor Bart Nnaji * Chairman/CEO #8 Mary Slessor Street Off Yakubu Gowon Crescent Asokoro, Abuja, FCT, Nigeria Tel: 234-9-3144840; 234-0-8033376700 Email: **nnaji@geometricpower.com** **Web: www.geometricpower.com** Also: Mr. Paul Anike Special Assistant to the Chairman Tel: 234-0-8033426747 Email**: anikep@geometricpower.com** And: Mr. Ike Odumei Legal Manager, Geometric Power Ltd. Email: **odumei@geometricpower.com**

8	Hudson Power Ltd	150	Mr. Seun Faluyi Project Director 13 Agoro Odiyan Street Victoria Island Lagos Tel: 234-1-2620683-4; 234-0-8022951218 Fax: 234-1-2616498 Email: **seun.faluyi@honeywellgroup.com**
9	ICS PowerLtd	624	Sam O.O. Uzoukwu Managing Director Plot 13, Kumasi Crescent Off Aminu Kano Crescent Wuse 2, Abuja Tel: 234-09-4138610; 234-0-8033156439 Email: **icspower_ltd@yahoo.com**
10	Ibafo Power Station Ltd	200	Dr Desalu Aderibigbe Managing Director RADMED Building Plot 1E Ligali Ayorinde Street Victoria Island,Lagos Tel: 234-0-8033006862; 234-0-803051637; 234-01-4711385 Email: **daader@gmail.com;** **desaluwa@gmail.com**
11	Ibom Power Project	Phase(1)-191 Phase(2)-500	Ime Asibong Tel: 234-0-8034003930 Email: **iasibong@ibonpower.com** Gareth M Wilcox, Managing Director Email: gmwilcox@ibompower.com
12	Index Thermal Power Ltd	1800	Dr. Lana Chairman/CEO Index Thermal Power Ltd Command House Off Aso Clinic Road Abuja, FCT, Nigeria Tel: 234-0-8033119299; 234-09-3147388

13	Mabon Energy Ltd	39	Sir Azike Okechukwu Manging Director 29 Sanusi Fafunwa Street Victoria Island, Lagos Tel: 234-09-2624880; 234-0-8054256364 Email: **sirazike@yahoo.co.uk** Also: Mr. Richard Madubunyi, Director Tel: 44-78881888880 Email: **richardmadubunyi@msn.com**
14	Minaj Holdings Ltd	115 (Coal Based)**	Senator M.N.I.Ajegbo Chairman/CEO Minaj Holdings Ltd 1st Floor, Fortune Towers 27/29 Adeyemo Alakija Street Victoria Island, Lagos Nigeria.
15	Nigerian Agip Oil Co.Ltd	480	Mr. Oded Mayer Gas Business manager Nigerian Agip Oil Company Ltd. Plot PC 23, Engineering Close Victoria Island, Lagos Tel: 234-01-2621600-9; Email: **ode.mayer@naoc.agip.it**
16	Nigerian Electricity Supply Corporation Ltd (NESCO)	30	Abraham Adama Manging Director P.O. Box 15 Bukuru, Jos, Nigeria Tel: 234-0-8057372645 Email: **nesconi@aol.com**
17	Shell Petroleum Dev.Co	624	Victor I Okoronkwo Shell Petroleum Dev.Co of Nigeria Ltd Shell Industrial Area, Rumuobiakani Port Harcourt, Rivers State Tel: 234-084-427582; 084-428957 Email: **victor.i.okoronkwo@shell.com**

18	Shoreline Power Company	100	Obiora Obi Director of Business Development Igbesa Road, South Industrial Zone Agbara Estate, Ogun State Tel: 234-01-4937328; 234-0-8033056464 Email: **obi@shoreline_power.com**
19	Supertek Nigeria Ltd	1000	Joshua A. Gana Managing Director/CEO #2 Misratah Street Off Paraoku Street Off Aminu Kano Crescent Wuse 2, Abuja Tel: 234-09-5238984;234-09-2731122; 234-0-8033030300; Email: **joshuagana@superteknigeria.com**
20	Westcom Technologies & Energy Services Ltd	1000	Mr. Adeyemi Fajobi Project Director Plot 4B Foreshore Street Osborne Estate, Ikoyi, Lagos State Tel: 234-01-2670360-1; 234-0-8083132808 Fax: 234-01-2690160 Email: **yfajobi@gmail.com**

**** Professor Nnaji is also the current Chairman of Private Sector IPP Investors and Operators forum in Nigeria.***
*****The 150 MW Power generation plant will be based on Coal.***

(B) Public Sector Institutions

	Institution and Address	Contact Name, Telephone and Email Address
1	Federal Ministry of Energy (Power) 7th Floor, Block D,NNPC Towers Herbert Macauly Way Central Business District PMB 449, Abuja	• Dr. Abdullahi Aliyu, Permanent Secretary, Tel: 234-9-2732363; 234-9-6737815; 234-0-8032456067; Email: **abdullahialiyu@microaccess.com** • Engr. H Nggada, Director Electrical Inspectorate Services Tel: 234-0-8037863939 Email: hnggada@yahoo.com
2	National Energy Commission (NEC) Plot 701C Central Area Behind National Mosque PMB 358, Garki, Abuja	• Ayodele Omowumi, Director of Research Tel: 234-9-6713340; 234(0)803-311-7709; 234-0-8059687841 Email: **ayodeleomowumi@yahoo.com** • Professor A.S. Sambo, Director General/CEO Tel: 234-0-9 5234926; 234-0-8033111631 Email: **assambo@yahoo.com; dg@energy.gov.ng**
3	Nigerian Electricity Regulatory Commission (NERC) Plot 1099, First Avenue Off Shehu Shagari Way, CBD PMB 136, Garki, Abuja, Nigeria www.nercng.org	• Dr. Ransome Owan, Chairman Tel:234-0-803786-4581; 234-0-59015037 Email: **dreowan@gmail.com** • Dr. Grace Eyoma, Executive Commissioner Tel: 234-9-6726169; 234-0-8033050851 Email: **geyoma@nercng.org; graceeyoma@yahoo.com** • Prof.O.C. Iloeje, Executive Commissioner (Planning & Research) Tel: 234-9-6709727; 234-0-8058052104 Email: **ociloeje@nercng.org; ociloeje2000@yahoo.com**
4	Bureau of Public Enterprises (BPE) 11 Oshun Crescent Off Ibrahim Babaginda Way Maitama District, PMB 442, Garki-Abuja http/www.bpeng.org,	• Irene N.Chigbue, Director General Email: **ichigbue@hotmail.com; ichigbue@bpeng.org** • Chudi Nelson Ojukwu Tel: 234-9-413-4636; 234-0-8033114820 Email: **chudiojukwu@yahoo.com; cojukwu@bpeng.org**
5	Nigerian Investment Promotion Commission (NIPC) Plot 1181, Aguiyi-Ironsi Street Maitama District, PMB 381, Garki-Abuja	• Waziri Zanna Laisu, Head Investment Unit Tel: 234-9-4136743; 234-0-803-786-9048 Email: **laisu@nipc.gov.ng**

6	Power Holding Corporation of Nigeria (PHCN) Corporate Headquarters # 14 Zambesi Crescent, Maitama, Abuja	• Engr. A.S.A. Bada, Head, System Operations Tel: 234-9-4135536; 234-0-8033082619 Email: **asabada@nepanigeria.org; asabada@gmail.com** • Bashir Sufyan, Head Legal,Transmission Co. of Nigeria (TCN) Tel: 234-0-805-248-2540; Email: **basher_sufyan@yahoo.com**.
7	Niger Delta Power Holding Co. (NDPHC) PHCN Corporate Headquarters #14 Zambesi Crescent, Maitama, Abuja	• Mr. Olotu, General Manager; Tel 234-0-8033376700
8	Nigerian Electricity Liability Management Company Ltd. (NELMCO);11Oshun Crescent, Maitama District PMB442, Garki-Abuja	• Mr. Samuel Agbogun, President Tel: 234-0-8033007082; 234-9-6703297 Email: **samjagbogun@yahoo.co.uk**

(C) List of Investment Banks

	Bank Name	Contact name and Email addresse
1	Africa Financial Corporation (AFC) 3a Osborne Road, Ikoyi, Lagos	• **Issac Sam**, Investment Advisor on IPP Tel: 234-1-2799606; 234-0-7034033643 Email: **Isaac.sam@africafc.org**
2	United Bank for Africa (UBA) UBA House, 57 Marina, Lagos	• **Phillip Oduoza**, Deputy M.D Tel: 234-803-4004015
3	Diamond Bank Plot 1251, Adeola Hopewell Street P.O.Box 70381,Victoria Island, Lagos	• Tony Onwu, Managing Director Tel: 234-0-8037900016 Website: www.diamondbank.com
4	Zenith Bank * Plot 87, Ajose Adeogun Street P.O. Box 75315, Victoria Island	• Akin Ogunranti, Head Multilaterals/Conglomerates * Tel: 234-1-2781373 Email: **akin.ogunranti@zenithbank.com** • Dr. Wale Bolorunduro, General Manger Email: **adewale.bolorunduro@zenithbank.com**
5	Fidelity Bank PLC Samuel Asabia House 35 Marina Street P.O.Box 5216, Lagos Nigeria	• Abdul-Rahman Esene, Executive Director Tel: 234-1-2610408-9 Email: **Abdul-rahman.esene@fidelitybankplc.com**
6	Oceanic Bank Ozumba Mbadiwe Avenue P.O.Box 75073 Victoria Island, Lagos Nigeria	• Tejiro Ibru, Sector Manger, Multilateral Institution Tel: 234-1-2705010-9; 234-1-2712628-9 Email: **tejiro_i@oceanicbanknigeria.com**
7	Stanbic Bank * Stanbic House Plot 688 Amodu Tijani Close Victoria Island, Lagos Nigeria	• Maina Nwangi * Tel: 234-1-2709660 Email: **MwangiM@stanbic.com**
8	Guaranty Trust Bank Plot 1669 Oyin Joleyemi Street Victoria Island, Lagos, igeria	• Ms. KafilatA.Araoye, General Manger Email: **kafilat@gtplc.com**
9	InterContinental Bank Plot 999C, Danmole Street PMB 80150, Victoria Island, Lagos	• Kenneth Okeiyi, Manager, Corporate Finance$ Multilateral Funding Tel: 234-1-2771106, Ext. 2516 Email **okeiyi.kenneth@intercontinentalbankplc.com**
10	BGL Securities * Millennium House #12A Catholitic Mission Street Lagos Island, P.O.Box 74122 Victoria Island, Lagos Email: **www.bgltd.com**	• Chibundu Edozie, Executive Director, Advisory Services * Tel: 234-1-2645221 Email: **Chibundu.Edozie@bgltd.com** • Jide Dada Tel: 08052658690 Email: **jide.dada@bgltd.com**

11	Investment Banking and Trust Company (IBTC); Plot 1712 Idejo Street, Victoria Island,Lagos, Nigeria;	• Oluwande Muoyo, Head Corporate Banking Tel: 234-1-2620380-9 Email: **Oluwande.Muoyo@ibtc.com;** **Website:www.ibtc.com.**

ANNEX 3

U.S. TRADE AND DEVELOPMENT AGENCY
Arlington, VA 22209-2131

NATIONALITY, SOURCE, AND ORIGIN REQUIREMENTS

The purpose of USTDA's nationality, source, and origin requirements is to assure the maximum practicable participation of American contractors, technology, equipment and materials in the prefeasibility, feasibility, and implementation stages of a project.

USTDA STANDARD RULE (GRANT AGREEMENT STANDARD LANGUAGE):

Except as USTDA may otherwise agree, each of the following provisions shall apply to the delivery of goods and services funded by USTDA under this Grant Agreement: (a) for professional services, the Contractor must be either a U.S. firm or U.S. individual; (b) the Contractor may use U.S. subcontractors without limitation, but the use of subcontractors from host country may not exceed twenty percent (20%) of the USTDA Grant amount and may only be used for specific services from the Terms of Reference identified in the subcontract; (c) employees of U.S. Contractor or U.S. subcontractor firms responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for implementation of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in host country are not subject to the above restrictions. USTDA will make available further details concerning these standards of eligibility upon request.

NATIONALITY:

1) Rule

Except as USTDA may otherwise agree, the Contractor for USTDA funded activities must be either a U.S. firm or a U.S. individual. Offerers are encouraged to submit proposals that utilize local labor. Prime contractors may utilize U.S.

subcontractors without limitation, but the use of host country subcontractors is limited to 20% of the USTDA grant amount.

2) Application

Accordingly, only a U.S. firm or U.S. individual may submit proposals on USTDA funded activities. Although those proposals may include subcontracting arrangements with host country firms or individuals for up to 20% of the USTDA grant amount, they may not include subcontracts with third country entities. U.S. firms submitting proposals must ensure that the professional services funded by the USTDA grant, to the extent not subcontracted to host country entities, are supplied by employees of the firm or employees of U.S. subcontractor firms who are U.S. individuals.

Interested U.S. firms and consultants who submit proposals must meet USTDA nationality requirements as of the due date for the submission of proposals and, if selected, must continue to meet such requirements throughout the duration of the USTDA-financed activity. These nationality provisions apply to whatever portion of the Terms of Reference is funded with the USTDA grant.

3) Definitions

A "U.S. individual" is (a) a U.S. citizen, or (b) a non-U.S. citizen lawfully admitted for permanent residence in the U.S. (a green card holder).

A "U.S. firm" is a privately owned firm which is incorporated in the U.S., with its principal place of business in the U.S., and which is either (a) more than 50% owned by U.S. individuals, or (b) has been incorporated in the U.S. for more than three (3) years prior to the issuance date of the request for proposals; has performed similar services in the U.S. for that three (3) year period; employs U.S. citizens in more than half of its permanent full-time positions in the U.S.; and has the existing capability in the U.S. to perform the work in question.

A partnership, organized in the U.S. with its principal place of business in the U.S., may also qualify as a "U.S. firm" as would a joint venture organized or incorporated in the United States consisting entirely of U.S. firms and/or U.S. individuals.

A nonprofit organization, such as an educational institution, foundation, or association may also qualify as a "U.S. firm" if it is incorporated in the United States and managed by a governing body, a majority of whose members are U.S. individuals.

SOURCE AND ORIGIN:

1) Rule

In addition to the nationality requirement stated above, any goods (e.g., equipment and materials) and services related to their shipment (e.g., international transportation and insurance) funded under the USTDA Grant Agreement must have their source and origin in the United States, unless USTDA otherwise agrees. However, necessary purchases of goods and project support services which are unavailable from a U.S. source (e.g., local food, housing and transportation) are eligible without specific USTDA approval.

2) Application

Accordingly, the prime contractor must be able to demonstrate that all goods and services purchased in the host country to carry out the Terms of Reference for a USTDA Grant Agreement that were not of U.S. source and origin were unavailable in the United States.

3) Definitions

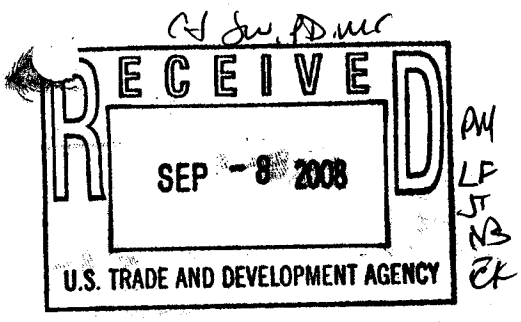
"Source" means the country from which shipment is made.

"Origin" means the place of production, through manufacturing, assembly or otherwise.

Questions regarding these nationality, source and origin requirements may be addressed to the USTDA Office of General Counsel.

ANNEX 4

USTDA # 08-11022A
Nigeria



GRANT AGREEMENT

This Grant Agreement is entered into between the Government of the United States of America, acting through the U.S. Trade and Development Agency ("USTDA") and the State of Adamawa acting through the Office of the Governor ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Agreement US$467,000 ("USTDA Grant") to fund the cost of goods and services required for a feasibility study ("Study") on the proposed Kiri Dam Hydroelectric Plant Project ("Project") in Nigeria ("Host Country").

1. USTDA Funding

The funding to be provided under this Grant Agreement shall be used to fund the costs of a contract between the Grantee and the U.S. firm selected by the Grantee ("Contractor") under which the Contractor will perform the Study ("Contract"). Payment to the Contractor will be made directly by USTDA on behalf of the Grantee with the USTDA Grant funds provided under this Grant Agreement.

2. Terms of Reference

The Terms of Reference for the Study ("Terms of Reference") are attached as Annex I and are hereby made a part of this Grant Agreement. The Study will examine the technical, financial, environmental, and other critical aspects of the proposed Project. The Terms of Reference for the Study shall also be included in the Contract.

3. Standards of Conduct

USTDA and the Grantee recognize the existence of standards of conduct for public officials, and commercial entities, in their respective countries. The parties to this Grant Agreement and the Contractor shall observe these standards, which include not accepting payment of money or anything of value, directly or indirectly, from any person for the purpose of illegally or improperly inducing anyone to take any action favorable to any party in connection with the Study.

4. Grantee Responsibilities

The Grantee shall undertake its best efforts to provide reasonable support for the Contractor, such as local transportation, office space, and secretarial support.

5. USTDA as Financier

(A) USTDA Approval of Competitive Selection Procedures

Selection of the U.S. Contractor shall be carried out by the Grantee according to its established procedures for the competitive selection of contractors with advance notice of the procurement published online through *Federal Business Opportunities (www.fedbizopps.gov)*. Upon request, the Grantee will submit these contracting procedures and related documents to USTDA for information and/or approval.

(B) USTDA Approval of Contractor Selection

The Grantee shall notify USTDA at the address of record set forth in Article 17 below upon selection of the Contractor to perform the Study. Upon approval of this selection by USTDA, the Grantee and the Contractor shall then enter into a contract for performance of the Study. The Grantee shall notify in writing the U.S. firms that submitted unsuccessful proposals to perform the Study that they were not selected.

(C) USTDA Approval of Contract Between Grantee and Contractor

The Grantee and the Contractor shall enter into a contract for performance of the Study. This contract, and any amendments thereto, including assignments and changes in the Terms of Reference, must be approved by USTDA in writing. To expedite this approval, the Grantee (or the Contractor on the Grantee's behalf) shall transmit to USTDA, at the address set forth in Article 17 below, a photocopy of an English language version of the signed contract or a final negotiated draft version of the contract.

(D) USTDA Not a Party to the Contract

It is understood by the parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of the contract and any amendments thereto, including assignments, the selection of all contractors, the Terms of Reference, the Final Report, and any and all documents related to any contract funded under the Grant Agreement. The parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from exercising these approval rights shall be made as a financier in the course of funding the Study and shall not be construed as making USTDA a party to the contract. The parties hereto understand and agree that USTDA may, from time to time, exercise the foregoing approval rights, or discuss matters related to these rights and the Project with the parties to the contract or any subcontract, jointly or separately, without thereby incurring any responsibility or liability to such parties. Any approval or failure to approve by USTDA shall not bar the Grantee or USTDA from asserting any right they might have against the

Contractor, or relieve the Contractor of any liability which the Contractor might otherwise have to the Grantee or USTDA.

(E) Grant Agreement Controlling

Regardless of USTDA approval, the rights and obligations of any party to the contract or subcontract thereunder must be consistent with this Grant Agreement. In the event of any inconsistency between the Grant Agreement and any contract or subcontract funded by the Grant Agreement, the Grant Agreement shall be controlling.

6. Disbursement Procedures

(A) USTDA Approval of Contract Required

USTDA will make disbursements of Grant funds directly to the Contractor only after USTDA approves the Grantee's contract with the Contractor.

(B) Contractor Invoice Requirements

The Grantee should request disbursement of funds by USTDA to the Contractor for performance of the Study by submitting invoices in accordance with the procedures set forth in the USTDA Mandatory Clauses in Annex II.

7. Effective Date

The effective date of this Grant Agreement ("Effective Date") shall be the date of signature by both parties or, if the parties sign on different dates, the date of the last signature.

8. Study Schedule

(A) Study Completion Date

The completion date for the Study, which is January 31, 2010, is the date by which the parties estimate that the Study will have been completed.

(B) Time Limitation on Disbursement of USTDA Grant Funds

Except as USTDA may otherwise agree, (a) no USTDA funds may be disbursed under this Grant Agreement for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (b) all funds made available under the Grant Agreement must be disbursed within four (4) years from the Effective Date of the Grant Agreement.

9. USTDA Mandatory Clauses

All contracts funded under this Grant Agreement shall include the USTDA mandatory clauses set forth in Annex II to this Grant Agreement. All subcontracts funded or partially funded with USTDA Grant funds shall include the USTDA mandatory clauses, except for clauses B(1), G, H, I, and J.

10. Use of U.S. Carriers

(A) Air

Transportation by air of persons or property funded under the Grant Agreement shall be on U.S. flag carriers in accordance with the Fly America Act, 49 U.S.C. 40118, to the extent service by such carriers is available, as provided under applicable U.S. Government regulations.

(B) Marine

Transportation by sea of property funded under the Grant Agreement shall be on U.S. carriers in accordance with U.S. cargo preference law.

11. Nationality, Source and Origin

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and services funded by USTDA under the Grant Agreement: (a) for professional services, the Contractor must be either a U.S. firm or U.S. individual; (b) the Contractor may use U.S. subcontractors without limitation, but the use of subcontractors from Host Country may not exceed twenty percent (20%) of the USTDA Grant amount and may only be used for specific services from the Terms of Reference identified in the subcontract; (c) employees of U.S. Contractor or U.S. subcontractor firms responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions. USTDA will make available further details concerning these provisions upon request.

12. Taxes

USTDA funds provided under the Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country. Neither the Grantee nor the Contractor will seek reimbursement from USTDA for such taxes, tariffs, duties, fees or other levies.

13. Cooperation Between Parties and Follow-Up

The parties will cooperate to assure that the purposes of the Grant Agreement are accomplished. For five (5) years following receipt by USTDA of the Final Report (as defined in Clause I of Annex II), the Grantee agrees to respond to any reasonable inquiries from USTDA about the status of the Project.

14. Implementation Letters

To assist the Grantee in the implementation of the Study, USTDA may, from time to time, issue implementation letters that will provide additional information about matters covered by the Grant Agreement. The parties may also use jointly agreed upon implementation letters to confirm and record their mutual understanding of matters covered by the Grant Agreement.

15. Recordkeeping and Audit

The Grantee agrees to maintain books, records, and other documents relating to the Study and the Grant Agreement adequate to demonstrate implementation of its responsibilities under the Grant Agreement, including the selection of contractors, receipt and approval of contract deliverables, and approval or disapproval of contractor invoices for payment by USTDA. Such books, records, and other documents shall be separately maintained for three (3) years after the date of the final disbursement by USTDA. The Grantee shall afford USTDA or its authorized representatives the opportunity at reasonable times to review books, records, and other documents relating to the Study and the Grant Agreement.

16. Representation of Parties

For all purposes relevant to the Grant Agreement, the Government of the United States of America will be represented by the U. S. Ambassador to Host Country or USTDA and Grantee will be represented by the Governor of Adamawa State. The parties hereto may, by written notice, designate additional representatives for all purposes under the Grant Agreement.

17. Addresses of Record for Parties

Any notice, request, document, or other communication submitted by either party to the other under the Grant Agreement shall be in writing or through a wire or electronic medium which produces a tangible record of the transmission, such as a telegram, cable or facsimile, and will be deemed duly given or sent when delivered to such party at the following:

To: Office of the Governor of Adamawa State
P.M.B. 2066
Yola, Adamawa State

To: U.S. Trade and Development Agency
1000 Wilson Boulevard, Suite 1600
Arlington, Virginia 22209-3901
USA

Phone: (703) 875-4357
Fax: (703) 875-4009

All such communications shall be in English, unless the parties otherwise agree in writing. In addition, the Grantee shall provide the Commercial Section of the U.S. Embassy in Host Country with a copy of each communication sent to USTDA.

Any communication relating to this Grant Agreement shall include the following fiscal data:

Appropriation No.: 11 8191001
Activity No.: 2008-11022A
Reservation No.: 2008110036
Grant No.: GH2008110007

18. Termination Clause

Either party may terminate the Grant Agreement by giving the other party thirty (30) days advance written notice. The termination of the Grant Agreement will end any obligations of the parties to provide financial or other resources for the Study, except for payments which they are committed to make pursuant to noncancellable commitments entered into with third parties prior to the written notice of termination.

19. Non-waiver of Rights and Remedies

No delay in exercising any right or remedy accruing to either party in connection with the Grant Agreement shall be construed as a waiver of such right or remedy.

20. U.S. Technology and Equipment

By funding this Study, USTDA seeks to promote the project objectives of the Host Country through the use of U.S. technology, goods, and services. In recognition of this purpose, the Grantee agrees that it will allow U.S. suppliers to compete in the procurement of technology, goods and services needed for Project implementation.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the Government of the United States of America and the State of Adamawa, each acting through its duly authorized representative, have caused this Agreement to be signed in the English language in their names and delivered as of the day and year written below. In the event that this Grant Agreement is signed in more than one language, the English language version shall govern.

For the Government of the United States of America

By: **Lisa Piascik**
Charge'd'Affaires
Embassy of the United States
Abuja, Nigeria

Date: September 02, 2008

For the State of Adamawa

By: **Barrister Musa Kaibo**
Permanent Secretary
Adamawa Liaison Office, Abuja

Date: September 02, 2008

Witnessed:

By: **Robert J. Tansey**
Economic Counselor
Embassy of the United States
Abuja, Nigeria

Witnessed:

By: **Alhaji Jafaru Malik**
Personal Assistant to the Honorable
Governor Murtala Hamman Yero Nyako

Annex I -- Terms of Reference

Annex II -- USTDA Mandatory Clauses

Annex I

TERMS OF REFERENCE

Objectives

The objective of this Study is to assess the feasibility of converting an existing irrigation dam on the Gongola River in the State of Adamawa in north-eastern Nigeria to a 35 MW hydroelectric power plant, including the construction of the necessary transformers and a short transmission line to bring the electricity from the site to a nearby grid line.

Tasks

Note: The Grantee (with assistance from Contractor) shall form a Technical Advisory Committee ("Advisory Committee"), composed of members of the Adamawa Governor's Office, the Adamawa State Assembly, the Benue River Development Authority and other stakeholders as identified by the Grantee.

The purpose of the Advisory Committee shall be to coordinate the Study, provide feedback to the Contractor's work, and take a pro-active role in assisting the Contractor's activities. The members of the Advisory Committee shall convene in Yola for the Project Kick-Off meeting, and shall provide feedback to the Contractor in an expedited manner. The Grantee shall appoint a Project Manager to oversee and facilitate the Advisory Committee and be responsible for coordinating its inputs into the Study. Any costs related to the participation of members of the Advisory Committee in its meetings and deliberations, such as time, travel, lodging, per diem, meeting room space etc., will be borne by the participating organizations and not paid for by the USTDA Grant.

Task A Purpose and Objective of Study

1) The Contractor shall fully describe and document the objective of the Study, which is to assess the feasibility of converting an existing irrigation dam on the Gongola River in the State of Adamawa in north-eastern Nigeria to a 35 MW hydroelectric power plant, including the construction of the necessary transformers and a short transmission line to bring the electricity from the site to a nearby grid line. The Contractor shall meet with the Advisory Committee in Yola to launch the Study. During this meeting, the Contractor's work plan shall be reviewed, along with the Study objectives, desired outcome, and reporting requirements. During this task, the Contractor shall conduct one-on-one meetings with relevant governmental and private entities to collect relevant data required for the detailed work plan, discuss the Study scope as set forth in these Terms of Reference, if required, and identify the stakeholder staff that will be involved with the Study.

Task B Technical Assessment

1) The Contractor shall visually inspect the irrigation dam on location and review its original design drawings and the water flow data that are available on site. The Grantee shall make the water flow data available to the Contractor.
2) The Contractor shall asses the available "head" (water height) at the site.
3) Given the head and water quantity available for power generation, the Contractor shall calculate the average yearly capacity, in MW, of the power plant, and the minimum available capacity during the dry season.
4) The Contractor shall develop pre-engineering designs of the physical configuration of the generating facility and the civil works required to effect the conversion from irrigation only to irrigation plus power generation. These designs shall be of sufficient detail to develop reasonably accurate cost estimates, but not at the detail level to serve as blueprints for actual construction. This task shall also include an assessment of whether it is technically feasible to raise the head of the plant, as well as an assessment of whether and where a head race is advisable.
5) With the physical size and layout of the power plant established, the Contractor shall determine the size and type of the turbines and generators to be installed, as well as the attendant electrical and mechanical equipment including the switchyard, the transmission line, and the hook-up to the nearby national grid.
6) The Contractor shall check the physical condition and size of the receiving transmission line to assess whether it will be large enough and in sufficiently good condition to take on the power from the new plant. If not, the Contractor shall specify the required line repairs or additions that will be needed to evacuate the power to the City of Yola.
7) The Contractor shall prepare an alternative analysis of evacuating the new power off-grid to the City of Yola.
8) The Contractor shall also prepare a flow-stability analysis under the above-referenced grid-evacuation and off-grid-evacuation scenarios.
9) The Contractor shall develop draft engineering drawings to be used as guides in the conversion of the irrigation dam to power generation and in the construction of the power plant proper.
10) The Contractor shall develop a cost estimate for the dam conversion and the plant construction under both the grid-evacuation and the off-grid-evacuation scenarios and make recommendations to the Advisory Committee regarding the advantages and disadvantages of these two options.
11) Once the Advisory Committee makes a decision between the choices of evacuation through the national grid or through an off-grid line, the Contractor shall prepare final drawings and cost estimates for further economic and financial evaluations.

Task B Deliverable: The Contractor shall provide a written report to the Advisory Committee, which incorporates all the requirements under this Task.

Task C Economic Analysis of the Project

1) Under this Task, the Contractor shall perform a cash flow analysis, describe current market conditions, assist in the development of power supply and purchase agreements, and assess the merit of competing alternative methods of achieving the same or similar results.
2) The Contractor shall use a cash flow computer model for the following subtasks:
   a) The Contractor shall determine the annual and cumulative revenues accruing to the federal, state and local governments and to the corporate investor over the life span of the electrical equipment (30 years), as well as the investor's internal rate of return on equity-only and on leveraged equity investments, as needed, following completion of the Project.
   b) The Contractor's computer model shall reflect current and projected future prices. The Contractor shall also consider avoided costs due to fuel-oil cost savings on self-generating equipment, as well as consider economic costs associated with reduced power deliveries and black-outs that reduce current Gross State Product and retard future economic growth.
   c) The Contractor's power plant computer model shall also be used for the transmission line. The Contractor shall evaluate the cost and potential tariffs on the system using scenario runs around the transmission line. The Contractor shall fully describe evaluated costs and potential tariff requirements.
3) The Contractor shall analyze market conditions in the region to determine the absorptive capacity of end-users at the calculated cost-recovery prices or at the tariffs set by regulation.
4) The Contractor shall develop model power supply and purchase agreements between the various parties that are likely to be involved in commercial electricity transactions related to the Project. However, the Contractor will not be a party to actual negotiations and will not participate in the actual drafting of the final agreements, since these are typically negotiated after presentation of the Project to interested investors.
5) The Contractor shall develop cost estimates and draft tender documents for the Project and its sub-components, including the following:
   a) Conversion of the irrigation dam and construction of the power plant, including development of draft tender documents for an independent power plant ("IPP") and a plant operated as a public-private partnership ("PPP").
   b) Construction/reinforcement/rehabilitation of relevant portions of the national grid or, depending on the routing decision taken under Task B-11, construction of the off-grid evacuation line to Yola.

Task C Deliverable: The Contractor shall provide a written report to the Advisory Committee, which incorporates all the requirements and documents drafted under this Task.

Task D Financial Analysis of the Project

1) In designing the debt structure, co-financing of loans, and loan guarantees for the Project, the Contractor shall consult with potential public and private financing organizations, including the World Bank and the European Bank for Reconstruction and Development, and with relevant regional multilateral development banks such as the African Development Bank. The Contractor shall also consult with bilateral funding institutions, such as the U.S. Ex-Im Bank and the Overseas Private Investment Corporation (OPIC).
2) For the power plant, transmission lines and related equipment, the Contractor shall use a computer spreadsheet model to run a sensitivity analysis for different financial configurations, including:
   a) Off-take commitments from various parties, with terms and pricing that vary with time.
   b) Debt sourced from multiple parties, with terms and pricing that vary with time and by party, and with priority of payment by party or group of parties.
   c) Equity and subordinated debt sourced from multiple parties, with terms and pricing that vary with time and party, and with priority of payment by party or group of parties.
3) The Contractor shall present various interim runs over time and shall develop not less than three alternative financial structures for final presentation, using in-put assumptions that have been discussed with and agreed to by the Advisory Committee.
4) The Contractor shall make available in a useable format to the Advisory Committee all copies of such analytical models that were developed or generated during this Study.

Task D Deliverable: The Contractor shall provide a written report to the Advisory Committee, which incorporates all the requirements under this Task.

Task E Preliminary Environmental and Social Impact Analysis of the Project

1) The Contractor shall perform a preliminary review of the Project's anticipated social and environmental impacts with reference to Host Country requirements (municipal, state, or federal) and in line with the guidelines of multilateral lending agencies, such as the World Bank. These reviews shall identify potentially negative impacts, discuss the extent to which they can be mitigated, and describe plans for a more detailed environmental and social impact assessment prior to start-up of construction operations.

Task F Review of Regulatory Issues Related to the Project

1) The Contractor shall review all applicable regulations and develop construction plans in accordance with existing and emerging regulations, such as the Electric Power Sector Reform Act of 2005 and the Multi-Year Tariff Order. While the procurement of a generating license will be the obligation of the ultimate investor, the Contractor

shall describe the steps that need to be followed in securing the required generation and transmission licenses.

Task G Analysis of Key Host Country Development Impacts

The Contractor shall discuss the developmental impact of the Project covering infrastructure, human capacity building, technology transfer and productivity improvement, and/or market-oriented reforms. While specific focus shall be placed on the immediate impact of the Project covered under the feasibility study, the Contractor's analysis shall also consider and describe any additional developmental benefits that may result from the Project's implementation, including spin-off and demonstration effects. The analysis shall be an assessment of each of the following categories with respect to the Project's overall development impact:

a) Infrastructure: The Contractor shall provide a statement on the infrastructure impact in the State of Adamawa, giving a brief synopsis. This statement shall include an estimate of new power that will become available, the number and severity of blackouts that will be eliminated, the cost savings to the State as a result of such eliminations and of the use of water in lieu of increasingly expensive hydrocarbon fuels to generate electricity.

b) Market- Oriented Reform: The Contractor shall provide a description of new or pending regulations, laws, or institutional changes and the effect they will likely have on the development of the Project. In particular, the Contractor shall describe the recently established regulatory reform in Nigeria and how it would affect operations at the proposed Project.

c) Human Capacity Building: The Contractor shall assess the number and types of local positions that will be needed to construct and operate the proposed Project and the expanded transmission and distribution systems in and around Yola. The Contractor shall describe training programs that new power plant employees will receive once the plant is in operation.

d) Technology Transfer and Productivity Enhancement: The Contractor shall provide a description of any advanced technologies that would be utilized as a result of the Project, as well as a description of efficiency gains that the more intensive and wide-spread use of electricity will provide to the State of Adamawa.

e) Other: The Contractor shall describe the State of Adamawa's revenue gains as well as income gains of the population that will result from the power plant, directly or through spill-over effects.

Task H U.S. Sources of Supply

1) While aiming at optimum specifications and characteristics for the Project, the Contractor shall provide an assessment of the availability of potential U.S. services and equipment needed in the construction of the power plant and the transmission system. The Contractor shall list the business names, points of contact, addresses, telephone-, e-mail-, and fax-numbers of principal prospective U.S. suppliers for each source.

2) The Contractor shall provide a list of potential U.S. investors and IPP developers and develop an investment circular that could be used to market the Project to them. The circular shall also be made available to the Nigerian IPP licensees.

Task I Implementation Plan

1) The Contractor shall prepare an implementation plan that shall describe the next steps to be taken after the completion of the Study and prior to start-up of the Project. This implementation plan shall include, but not be limited to, the following:
   a) Plans and cost estimates for the detailed Environmental Impact Assessment described under Task E, and;
   b) A listing of permits, public hearings, and similar proceedings that will be required during the Project approval process.

Task J Final Report/Deliverables

1) The Contractor shall prepare a Final Report in accordance with Clause I of the USTDA Mandatory Contract Clauses contained in Annex II of the Grant Agreement. The work performed under each of the tasks in the above terms of reference, including all of the deliverables, must be distinctly set forth in the Final Report in a substantive and comprehensive manner.
2) The Contractor shall prepare a Power Point Presentation for potential financial institutions and investors describing the Project. The purpose of the presentation shall be to introduce the Project to interested investors and shall include the Project's technical, economic, and financial aspects, and be accompanied by the model tender documents.
3) The Final Report shall include all deliverables and documents that have been provided to the Advisory Committee. In addition to any other required deliverables in accordance with Clause I of Annex II of the Grant Agreement, the Contractor shall provide each member of the Advisory Committee with both an electronic and hard copy of the final report as well as provide the Grantee with 6 copies of the final report in both bound form and on CD-ROM.

Notes:

(1) The Contractor is responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.

(2) The Contractor and the Grantee shall be careful to ensure that the public version of the Final Report contains no security or confidential information.

(3) The Grantee and USTDA shall have an irrevocable, worldwide, royalty-free, non-exclusive right to use and distribute the Final Report and all work product that is developed under these Terms of Reference.

Annex II

USTDA Mandatory Contract Clauses

A. USTDA Mandatory Clauses Controlling

The parties to this contract acknowledge that this contract is funded in whole or in part by the U.S. Trade and Development Agency ("USTDA") under the Grant Agreement between the Government of the United States of America acting through USTDA and the State of Adamawa acting through the Office of the Governor ("Client"), dated _____ ("Grant Agreement"). The Client has selected _____ ("Contractor") to perform the feasibility study ("Study") for the Kiri Dam Hydroelectric Plant Project ("Project") in Nigeria ("Host Country"). Notwithstanding any other provisions of this contract, the following USTDA mandatory contract clauses shall govern. All subcontracts entered into by Contractor funded or partially funded with USTDA Grant funds shall include these USTDA mandatory contract clauses, except for clauses B(1), G, H, I, and J. In addition, in the event of any inconsistency between the Grant Agreement and any contract or subcontract thereunder, the Grant Agreement shall be controlling.

B. USTDA as Financier

(1) USTDA Approval of Contract

All contracts funded under the Grant Agreement, and any amendments thereto, including assignments and changes in the Terms of Reference, must be approved by USTDA in writing in order to be effective with respect to the expenditure of USTDA Grant funds. USTDA will not authorize the disbursement of USTDA Grant funds until the contract has been formally approved by USTDA or until the contract conforms to modifications required by USTDA during the contract review process.

(2) USTDA Not a Party to the Contract

It is understood by the parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of this contract and amendments thereto, including assignments, the selection of all contractors, the Terms of Reference, the Final Report, and any and all documents related to any contract funded under the Grant Agreement. The parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from exercising these approval rights shall be made as a financier in the course of financing the Study and shall not be construed as making USTDA a party to the contract. The parties hereto understand and agree that USTDA may, from time to time, exercise the foregoing approval rights, or discuss matters related to these rights and the Project with the parties to the contract or any subcontract, jointly or separately, without thereby incurring any responsibility

or liability to such parties. Any approval or failure to approve by USTDA shall not bar the Client or USTDA from asserting any right they might have against the Contractor, or relieve the Contractor of any liability which the Contractor might otherwise have to the Client or USTDA.

C. Nationality, Source and Origin

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and services funded by USTDA under the Grant Agreement: (a) for professional services, the Contractor must be either a U.S. firm or U.S. individual; (b) the Contractor may use U.S. subcontractors without limitation, but the use of subcontractors from Host Country may not exceed twenty percent (20%) of the USTDA Grant amount and may only be used for specific services from the Terms of Reference identified in the subcontract; (c) employees of U.S. Contractor or U.S. subcontractor firms responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions. USTDA will make available further details concerning these provisions upon request.

D. Recordkeeping and Audit

The Contractor and subcontractors funded under the Grant Agreement shall maintain, in accordance with generally accepted accounting procedures, books, records, and other documents, sufficient to reflect properly all transactions under or in connection with the contract. These books, records, and other documents shall clearly identify and track the use and expenditure of USTDA funds, separately from other funding sources. Such books, records, and documents shall be maintained during the contract term and for a period of three (3) years after final disbursement by USTDA. The Contractor and subcontractors shall afford USTDA, or its authorized representatives, the opportunity at reasonable times for inspection and audit of such books, records, and other documentation.

E. U.S. Carriers

(1) Air

Transportation by air of persons or property funded under the Grant Agreement shall be on U.S. flag carriers in accordance with the Fly America Act, 49 U.S.C. 40118, to the extent service by such carriers is available, as provided under applicable U.S. Government regulations.

(2) Marine

Transportation by sea of property funded under the Grant Agreement shall be on U.S. carriers in accordance with U.S. cargo preference law.

F. Workman's Compensation Insurance

The Contractor shall provide adequate Workman's Compensation Insurance coverage for work performed under this Contract.

G. Reporting Requirements

The Contractor shall advise USTDA by letter as to the status of the Project on March 1st annually for a period of two (2) years after completion of the Study. In addition, if at any time the Contractor receives follow-on work from the Client, the Contractor shall so notify USTDA and designate the Contractor's contact point including name, telephone, and fax number. Since this information may be made publicly available by USTDA, any information which is confidential shall be designated as such by the Contractor and provided separately to USTDA. USTDA will maintain the confidentiality of such information in accordance with applicable law.

H. Disbursement Procedures

(1) USTDA Approval of Contract

Disbursement of Grant funds will be made only after USTDA approval of this contract. To make this review in a timely fashion, USTDA must receive from either the Client or the Contractor a photocopy of an English language version of a signed contract or a final negotiated draft version to the attention of the General Counsel's office at USTDA's address listed in Clause M below.

(2) Payment Schedule Requirements

A payment schedule for disbursement of Grant funds to the Contractor shall be included in this Contract. Such payment schedule must conform to the following USTDA requirements: (1) up to twenty percent (20%) of the total USTDA Grant amount may be used as a mobilization payment; (2) all other payments, with the exception of the final payment, shall be based upon contract performance milestones; and (3) the final payment may be no less than fifteen percent (15%) of the total USTDA Grant amount, payable upon receipt by USTDA of an approved Final Report in accordance with the specifications and quantities set forth in Clause I below. Invoicing procedures for all payments are described below.

(3) Contractor Invoice Requirements

USTDA will make all disbursements of USTDA Grant funds directly to the Contractor. The Contractor must provide USTDA with an ACH Vendor Enrollment Form (available from USTDA) with the first invoice. The Client shall request disbursement of funds by USTDA to the Contractor for performance of the contract by submitting the following to USTDA:

(a) Contractor's Invoice

The Contractor's invoice shall include reference to an item listed in the Contract payment schedule, the requested payment amount, and an appropriate certification by the Contractor, as follows:

(i) For a mobilization payment (if any):

"As a condition for this mobilization payment, the Contractor certifies that it will perform all work in accordance with the terms of its Contract with the Client. To the extent that the Contractor does not comply with the terms and conditions of the Contract, including the USTDA mandatory provisions contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA. "

(ii) For contract performance milestone payments:

"The Contractor has performed the work described in this invoice in accordance with the terms of its contract with the Client and is entitled to payment thereunder. To the extent the Contractor has not complied with the terms and conditions of the Contract, including the USTDA mandatory provisions contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

(iii) For final payment:

"The Contractor has performed the work described in this invoice in accordance with the terms of its contract with the Client and is entitled to payment thereunder. Specifically, the Contractor has submitted the Final Report to the Client, as required by the Contract, and received the Client's approval of the Final Report. To the extent the Contractor has not complied with the terms and conditions of the Contract, including the USTDA mandatory provisions contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

(b) Client's Approval of the Contractor's Invoice

(i) The invoice for a mobilization payment must be approved in writing by the Client.

(ii) For contract performance milestone payments, the following certification by the Client must be provided on the invoice or separately:

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and the terms and conditions of the USTDA Grant Agreement."

(iii) For final payment, the following certification by the Client must be provided on the invoice or separately:

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and terms and conditions of the USTDA Grant Agreement. The Final Report submitted by the Contractor has been reviewed and approved by the Client. "

(c) USTDA Address for Disbursement Requests

Requests for disbursement shall be submitted by courier or mail to the attention of the Finance Department at USTDA's address listed in Clause M below.

(4) Termination

In the event that the Contract is terminated prior to completion, the Contractor will be eligible, subject to USTDA approval, for reasonable and documented costs which have been incurred in performing the Terms of Reference prior to termination, as well as reasonable wind down expenses. Reimbursement for such costs shall not exceed the total amount of undisbursed Grant funds. Likewise, in the event of such termination, USTDA is entitled to receive from the Contractor all USTDA Grant funds previously disbursed to the Contractor (including but not limited to mobilization payments) which exceed the reasonable and documented costs incurred in performing the Terms of Reference prior to termination.

I. USTDA Final Report

(1) Definition

"Final Report" shall mean the Final Report described in the attached Annex I Terms of Reference or, if no such "Final Report" is described therein, "Final Report" shall mean a substantive and comprehensive report of work performed in accordance with the attached Annex I Terms of Reference, including any documents delivered to the Client.

(2) Final Report Submission Requirements

The Contractor shall provide the following to USTDA:

(a) One (1) complete version of the Final Report for USTDA's records. This version shall have been approved by the Client in writing and must be in the English language. It is the responsibility of the Contractor to ensure that

confidential information, if any, contained in this version be clearly marked. USTDA will maintain the confidentiality of such information in accordance with applicable law.

and

(b) One (1) copy of the Final Report suitable for public distribution ("Public Version"). The Public Version shall have been approved by the Client in writing and must be in the English language. As this version will be available for public distribution, it must not contain any confidential information. If the report in (a) above contains no confidential information, it may be used as the Public Version. In any event, the Public Version must be informative and contain sufficient Project detail to be useful to prospective equipment and service providers.

and

(c) Two (2) CD-ROMs, each containing a complete copy of the Public Version of the Final Report. The electronic files on the CD-ROMs shall be submitted in a commonly accessible read-only format. As these CD-ROMs will be available for public distribution, they must not contain any confidential information. It is the responsibility of the Contractor to ensure that no confidential information is contained on the CD-ROMs.

The Contractor shall also provide one (1) copy of the Public Version of the Final Report to the Foreign Commercial Service Officer or the Economic Section of the U.S. Embassy in Host Country for informational purposes.

(3) Final Report Presentation

All Final Reports submitted to USTDA must be paginated and include the following:

(a) The front cover of every Final Report shall contain the name of the Client, the name of the Contractor who prepared the report, a report title, USTDA's logo, USTDA's mailing and delivery addresses. If the complete version of the Final Report contains confidential information, the Contractor shall be responsible for labeling the front cover of that version of the Final Report with the term "Confidential Version." The Contractor shall be responsible for labeling the front cover of the Public Version of the Final Report with the term "Public Version." The front cover of every Final Report shall also contain the following disclaimer:

> "This report was funded by the U.S. Trade and Development Agency (USTDA), an agency of the U. S. Government. The opinions, findings, conclusions or recommendations expressed in this document are those of the author(s) and do not necessarily represent the official position or policies of USTDA. USTDA makes no representation about, nor does it accept

responsibility for, the accuracy or completeness of the information contained in this report."

(b) The inside front cover of every Final Report shall contain USTDA's logo, USTDA's mailing and delivery addresses, and USTDA's mission statement. Camera-ready copy of USTDA Final Report specifications will be available from USTDA upon request.

(c) The Contractor shall affix to the front of the CD-ROM a label identifying the Host Country, USTDA Activity Number, the name of the Client, the name of the Contractor who prepared the report, a report title, and the following language:

"The Contractor certifies that this CD-ROM contains the Public Version of the Final Report and that all contents are suitable for public distribution."

(d) The Contractor and any subcontractors that perform work pursuant to the Grant Agreement must be clearly identified in the Final Report. Business name, point of contact, address, telephone and fax numbers shall be included for Contractor and each subcontractor.

(e) The Final Report, while aiming at optimum specifications and characteristics for the Project, shall identify the availability of prospective U.S. sources of supply. Business name, point of contact, address, telephone and fax numbers shall be included for each commercial source.

(f) The Final Report shall be accompanied by a letter or other notation by the Client which states that the Client approves the Final Report. A certification by the Client to this effect provided on or with the invoice for final payment will meet this requirement.

J. Modifications

All changes, modifications, assignments or amendments to this contract, including the appendices, shall be made only by written agreement by the parties hereto, subject to written USTDA approval.

K. Study Schedule

(1) Study Completion Date

The completion date for the Study, which is January 31, 2010, is the date by which the parties estimate that the Study will have been completed.

(2) Time Limitation on Disbursement of USTDA Grant Funds

Except as USTDA may otherwise agree, (a) no USTDA funds may be disbursed under this contract for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (b) all funds made available under the Grant Agreement must be disbursed within four (4) years from the Effective Date of the Grant Agreement.

L. Business Practices

The Contractor agrees not to pay, promise to pay, or authorize the payment of any money or anything of value, directly or indirectly, to any person (whether a governmental official or private individual) for the purpose of illegally or improperly inducing anyone to take any action favorable to any party in connection with the Study. The Client agrees not to receive any such payment. The Contractor and the Client agree that each will require that any agent or representative hired to represent them in connection with the Study will comply with this paragraph and all laws which apply to activities and obligations of each party under this Contract, including but not limited to those laws and obligations dealing with improper payments as described above.

M. USTDA Address and Fiscal Data

Any communication with USTDA regarding this Contract shall be sent to the following address and include the fiscal data listed below:

U.S. Trade and Development Agency
1000 Wilson Boulevard, Suite 1600
Arlington, Virginia 22209-3901
USA

Phone: (703) 875-4357
Fax: (703) 875-4009

Fiscal Data:
Appropriation No.: 11 8/9 1001
Activity No.: 2008-11022A
Reservation No.: 2008110036
Grant No.: GH2008110007

N. Definitions

All capitalized terms not otherwise defined herein shall have the meaning set forth in the Grant Agreement.

O. Taxes

USTDA funds provided under the Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country. Neither the Client nor the Contractor will seek reimbursement from USTDA for such taxes, tariffs, duties, fees or other levies.

ANNEX 5

Annex I

TERMS OF REFERENCE

Objectives

The objective of this Study is to assess the feasibility of converting an existing irrigation dam on the Gongola River in the State of Adamawa in north-eastern Nigeria to a 35 MW hydroelectric power plant, including the construction of the necessary transformers and a short transmission line to bring the electricity from the site to a nearby grid line.

Tasks

Note: The Grantee (with assistance from Contractor) shall form a Technical Advisory Committee ("Advisory Committee"), composed of members of the Adamawa Governor's Office, the Adamawa State Assembly, the Benue River Development Authority and other stakeholders as identified by the Grantee.

The purpose of the Advisory Committee shall be to coordinate the Study, provide feedback to the Contractor's work, and take a pro-active role in assisting the Contractor's activities. The members of the Advisory Committee shall convene in Yola for the Project Kick-Off meeting, and shall provide feedback to the Contractor in an expedited manner. The Grantee shall appoint a Project Manager to oversee and facilitate the Advisory Committee and be responsible for coordinating its inputs into the Study. Any costs related to the participation of members of the Advisory Committee in its meetings and deliberations, such as time, travel, lodging, per diem, meeting room space etc., will be borne by the participating organizations and not paid for by the USTDA Grant.

Task A Purpose and Objective of Study

1) The Contractor shall fully describe and document the objective of the Study, which is to assess the feasibility of converting an existing irrigation dam on the Gongola River in the State of Adamawa in north-eastern Nigeria to a 35 MW hydroelectric power plant, including the construction of the necessary transformers and a short transmission line to bring the electricity from the site to a nearby grid line. The Contractor shall meet with the Advisory Committee in Yola to launch the Study. During this meeting, the Contractor's work plan shall be reviewed, along with the Study objectives, desired outcome, and reporting requirements. During this task, the Contractor shall conduct one-on-one meetings with relevant governmental and private entities to collect relevant data required for the detailed work plan, discuss the Study scope as set forth in these Terms of Reference, if required, and identify the stakeholder staff that will be involved with the Study.

Task B Technical Assessment

1) The Contractor shall visually inspect the irrigation dam on location and review its original design drawings and the water flow data that are available on site. The Grantee shall make the water flow data available to the Contractor.
2) The Contractor shall asses the available "head" (water height) at the site.
3) Given the head and water quantity available for power generation, the Contractor shall calculate the average yearly capacity, in MW, of the power plant, and the minimum available capacity during the dry season.
4) The Contractor shall develop pre-engineering designs of the physical configuration of the generating facility and the civil works required to effect the conversion from irrigation only to irrigation plus power generation. These designs shall be of sufficient detail to develop reasonably accurate cost estimates, but not at the detail level to serve as blueprints for actual construction. This task shall also include an assessment of whether it is technically feasible to raise the head of the plant, as well as an assessment of whether and where a head race is advisable.
5) With the physical size and layout of the power plant established, the Contractor shall determine the size and type of the turbines and generators to be installed, as well as the attendant electrical and mechanical equipment including the switchyard, the transmission line, and the hook-up to the nearby national grid.
6) The Contractor shall check the physical condition and size of the receiving transmission line to assess whether it will be large enough and in sufficiently good condition to take on the power from the new plant. If not, the Contractor shall specify the required line repairs or additions that will be needed to evacuate the power to the City of Yola.
7) The Contractor shall prepare an alternative analysis of evacuating the new power off-grid to the City of Yola.
8) The Contractor shall also prepare a flow-stability analysis under the above-referenced grid-evacuation and off-grid-evacuation scenarios.
9) The Contractor shall develop draft engineering drawings to be used as guides in the conversion of the irrigation dam to power generation and in the construction of the power plant proper.
10) The Contractor shall develop a cost estimate for the dam conversion and the plant construction under both the grid-evacuation and the off-grid-evacuation scenarios and make recommendations to the Advisory Committee regarding the advantages and disadvantages of these two options.
11) Once the Advisory Committee makes a decision between the choices of evacuation through the national grid or through an off-grid line, the Contractor shall prepare final drawings and cost estimates for further economic and financial evaluations.

Task B Deliverable: The Contractor shall provide a written report to the Advisory Committee, which incorporates all the requirements under this Task.

Task C Economic Analysis of the Project

1) Under this Task, the Contractor shall perform a cash flow analysis, describe current market conditions, assist in the development of power supply and purchase agreements, and assess the merit of competing alternative methods of achieving the same or similar results.
2) The Contractor shall use a cash flow computer model for the following subtasks:
   a) The Contractor shall determine the annual and cumulative revenues accruing to the federal, state and local governments and to the corporate investor over the life span of the electrical equipment (30 years), as well as the investor's internal rate of return on equity-only and on leveraged equity investments, as needed, following completion of the Project.
   b) The Contractor's computer model shall reflect current and projected future prices. The Contractor shall also consider avoided costs due to fuel-oil cost savings on self-generating equipment, as well as consider economic costs associated with reduced power deliveries and black-outs that reduce current Gross State Product and retard future economic growth.
   c) The Contractor's power plant computer model shall also be used for the transmission line. The Contractor shall evaluate the cost and potential tariffs on the system using scenario runs around the transmission line. The Contractor shall fully describe evaluated costs and potential tariff requirements.
3) The Contractor shall analyze market conditions in the region to determine the absorptive capacity of end-users at the calculated cost-recovery prices or at the tariffs set by regulation.
4) The Contractor shall develop model power supply and purchase agreements between the various parties that are likely to be involved in commercial electricity transactions related to the Project. However, the Contractor will not be a party to actual negotiations and will not participate in the actual drafting of the final agreements, since these are typically negotiated after presentation of the Project to interested investors.
5) The Contractor shall develop cost estimates and draft tender documents for the Project and its sub-components, including the following:
   a) Conversion of the irrigation dam and construction of the power plant, including development of draft tender documents for an independent power plant ("IPP") and a plant operated as a public-private partnership ("PPP").
   b) Construction/reinforcement/rehabilitation of relevant portions of the national grid or, depending on the routing decision taken under Task B-11, construction of the off-grid evacuation line to Yola.

Task C Deliverable: The Contractor shall provide a written report to the Advisory Committee, which incorporates all the requirements and documents drafted under this Task.

Task D Financial Analysis of the Project

1) In designing the debt structure, co-financing of loans, and loan guarantees for the Project, the Contractor shall consult with potential public and private financing organizations, including the World Bank and the European Bank for Reconstruction and Development, and with relevant regional multilateral development banks such as the African Development Bank. The Contractor shall also consult with bilateral funding institutions, such as the U.S. Ex-Im Bank and the Overseas Private Investment Corporation (OPIC).
2) For the power plant, transmission lines and related equipment, the Contractor shall use a computer spreadsheet model to run a sensitivity analysis for different financial configurations, including:
   a) Off-take commitments from various parties, with terms and pricing that vary with time.
   b) Debt sourced from multiple parties, with terms and pricing that vary with time and by party, and with priority of payment by party or group of parties.
   c) Equity and subordinated debt sourced from multiple parties, with terms and pricing that vary with time and party, and with priority of payment by party or group of parties.
3) The Contractor shall present various interim runs over time and shall develop not less than three alternative financial structures for final presentation, using in-put assumptions that have been discussed with and agreed to by the Advisory Committee.
4) The Contractor shall make available in a useable format to the Advisory Committee all copies of such analytical models that were developed or generated during this Study.

Task D Deliverable: The Contractor shall provide a written report to the Advisory Committee, which incorporates all the requirements under this Task.

Task E Preliminary Environmental and Social Impact Analysis of the Project

1) The Contractor shall perform a preliminary review of the Project's anticipated social and environmental impacts with reference to Host Country requirements (municipal, state, or federal) and in line with the guidelines of multilateral lending agencies, such as the World Bank. These reviews shall identify potentially negative impacts, discuss the extent to which they can be mitigated, and describe plans for a more detailed environmental and social impact assessment prior to start-up of construction operations.

Task F Review of Regulatory Issues Related to the Project

1) The Contractor shall review all applicable regulations and develop construction plans in accordance with existing and emerging regulations, such as the Electric Power Sector Reform Act of 2005 and the Multi-Year Tariff Order. While the procurement of a generating license will be the obligation of the ultimate investor, the Contractor

shall describe the steps that need to be followed in securing the required generation and transmission licenses.

Task G Analysis of Key Host Country Development Impacts

The Contractor shall discuss the developmental impact of the Project covering infrastructure, human capacity building, technology transfer and productivity improvement, and/or market-oriented reforms. While specific focus shall be placed on the immediate impact of the Project covered under the feasibility study, the Contractor's analysis shall also consider and describe any additional developmental benefits that may result from the Project's implementation, including spin-off and demonstration effects. The analysis shall be an assessment of each of the following categories with respect to the Project's overall development impact:

a) Infrastructure: The Contractor shall provide a statement on the infrastructure impact in the State of Adamawa, giving a brief synopsis. This statement shall include an estimate of new power that will become available, the number and severity of blackouts that will be eliminated, the cost savings to the State as a result of such eliminations and of the use of water in lieu of increasingly expensive hydrocarbon fuels to generate electricity.

b) Market- Oriented Reform: The Contractor shall provide a description of new or pending regulations, laws, or institutional changes and the effect they will likely have on the development of the Project. In particular, the Contractor shall describe the recently established regulatory reform in Nigeria and how it would affect operations at the proposed Project.

c) Human Capacity Building: The Contractor shall assess the number and types of local positions that will be needed to construct and operate the proposed Project and the expanded transmission and distribution systems in and around Yola. The Contractor shall describe training programs that new power plant employees will receive once the plant is in operation.

d) Technology Transfer and Productivity Enhancement: The Contractor shall provide a description of any advanced technologies that would be utilized as a result of the Project, as well as a description of efficiency gains that the more intensive and wide-spread use of electricity will provide to the State of Adamawa.

e) Other: The Contractor shall describe the State of Adamawa's revenue gains as well as income gains of the population that will result from the power plant, directly or through spill-over effects.

Task H U.S. Sources of Supply

1) While aiming at optimum specifications and characteristics for the Project, the Contractor shall provide an assessment of the availability of potential U.S. services and equipment needed in the construction of the power plant and the transmission system. The Contractor shall list the business names, points of contact, addresses, telephone-, e-mail-, and fax-numbers of principal prospective U.S. suppliers for each source.

2) The Contractor shall provide a list of potential U.S. investors and IPP developers and develop an investment circular that could be used to market the Project to them. The circular shall also be made available to the Nigerian IPP licensees.

Task I Implementation Plan

1) The Contractor shall prepare an implementation plan that shall describe the next steps to be taken after the completion of the Study and prior to start-up of the Project. This implementation plan shall include, but not be limited to, the following:
   a) Plans and cost estimates for the detailed Environmental Impact Assessment described under Task E, and;
   b) A listing of permits, public hearings, and similar proceedings that will be required during the Project approval process.

Task J Final Report/Deliverables

1) The Contractor shall prepare a Final Report in accordance with Clause I of the USTDA Mandatory Contract Clauses contained in Annex II of the Grant Agreement. The work performed under each of the tasks in the above terms of reference, including all of the deliverables, must be distinctly set forth in the Final Report in a substantive and comprehensive manner.
2) The Contractor shall prepare a Power Point Presentation for potential financial institutions and investors describing the Project. The purpose of the presentation shall be to introduce the Project to interested investors and shall include the Project's technical, economic, and financial aspects, and be accompanied by the model tender documents.
3) The Final Report shall include all deliverables and documents that have been provided to the Advisory Committee. In addition to any other required deliverables in accordance with Clause I of Annex II of the Grant Agreement, the Contractor shall provide each member of the Advisory Committee with both an electronic and hard copy of the final report as well as provide the Grantee with 6 copies of the final report in both bound form and on CD-ROM.

Notes:

(1) The Contractor is responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.

(2) The Contractor and the Grantee shall be careful to ensure that the public version of the Final Report contains no security or confidential information.

(3) The Grantee and USTDA shall have an irrevocable, worldwide, royalty-free, non-exclusive right to use and distribute the Final Report and all work product that is developed under these Terms of Reference.